The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 744.---Vol. XIX.] LONDON, SATURDAY, NOVEMBER 24, 1849. [Price 6d.

IMPORTANT SALE.

GALVANIZED IRON COMPANY'S WORKS, STAFFORDSHIRE.

KINGSWINFORD, CORBYN'S HALL AND TILED HOUSE ESTATES, DARLASTON GREEN MINERAL ESTATE, AND PHŒNIX IRON-WORKS, WEST BROMWICH.

MESSRS. OATES & PERRENS have been honoured by the directors of the above company with instructions to SELL, BY PUBLIC AUCTION, at Dee's Royal Hotel, BIRMINGHAM, on Thursday, the 29th day of November inst., at Twelve for One o'clock precisely, either together or in the following, or such other, lots as may be agreed upon at the time of sale, and subject to such conditions as will be then produced, the WHOLE of their newly-opened and improved WORKS and MINES in SOUTH STAFFORDSHIRE—viz.:

LOT I.—PHŒNIX IRON-WORKS.

All that most desirable and eligibly situated FREEHOLD IRON-WORKS and PREMISES, the PHŒNIX IRON-WORKS, WEST BROMWICH, in the county of STAFFORD. The MILLS and FORGES of which comprise the following PLANT AND MACHINERY—viz.:

AN ENGINE, 100-horse power, by Boulton and Watt, in brick engine-house, with 2 35-feet boilers, complete, and recently erected, driving a forge; a 20-inch boiler plate tram, and rail mill, to which are attached 2 punching and straightening machines, driven by an engine of 100-horse power.

An ENGINE, of 60-horse power, by J. and G. Davis, in brick engine-house, with 3 25-feet boilers, driving a forge; an 18-inch boiler-plate and sheet mill; and a 16-inch tram for the manufacture of bars, T, and angle iron. With this work is an engine, 20-horse power, driving an 8-inch merchant tram, saw and turning lathe—the whole employing 34 puddling and heating furnaces, and being capable of manufacturing from 350 to 400 tons of finished iron per week.

There is also belonging to this work blacksmiths' and wheelwrights' shops, stock-takers, and general offices, &c., together with an ample wharfage of seven boats' length to the Birmingham Canal, and an excellent frontage to the turnpike-road leading from Swan Village, West Bromwich, to Oldbury.

The premises, which are most eligibly situated, occupy about two acres of land, the valuable mines under which (belonging to the property) remain ungotten. With this lot will also BE SOLD the following PROPERTY (held on lease for 21 years, of which 18 are unexpired), consisting of an excellent DWELLING-HOUSE, with OUTBUILDINGS and APPURTENANCES, and about FOUR ACRES of PASTURE LAND, now in the occupation of Mr. Spencer, manager to the said works; a capital WHARF and STORE-YARD adjoining the works; FOUR WORKMEN'S COTTAGES, with GARDENS and APPURTENANCES thereto belonging, now in the occupation of William Williams, John Harley, Richard Horton, and Sarah Summers, together with a capital 8-quarter MALT-HOUSE, adjoining to the said canal, in the occupation of William Downing.

LOT II.—DARLASTON GREEN MINES,

Consisting of about TWENTY-SIX ACRES of those excellent and well-known MINES of COAL and IRONSTONE, situate at DARLASTON GREEN, in the parish of Darlaston, and county of Stafford, which have been recently opened by the Galvanized Iron Company, and which are now in complete working order, having been well and completely drained. The PLANT comprises THREE WINDING ENGINES, of 24-horse, 26-horse, and 14-horse power, with SIX PIT SHAFTS, WINDING and PUMPING APPARATUS, the whole of which is in the most efficient state.

The greater portion of the mines remain ungotten, and are held under lease for a term of years, of which 23 are unexpired. The Birmingham Canal runs into the property, for the produce of which there is an abundant demand in the surrounding district.

LOT III.—KINGSWINFORD, CORBYN'S HALL, AND TILED HOUSE ESTATES,

Comprising the valuable MINES of THICK, or TEN-YARD COAL, BROOCH COAL IRONSTONE, and other MINES and MINERALS now remaining to be gotten under upwards of 203 acres of land, situate in the parish of Kingswinford and county of Stafford; the whole PLANT and MATERIALS of which are now in complete working order, and comprise a sufficient number of SHAFTS, sunk to the various measures, and worked by nine powerful engines; FOUR BLAST FURNACES, in an efficient state, capable of making from 500 to 600 tons per week, with superior blowing engines, of 65-horse and 50-horse power, in brick engine-houses, hot-blast apparatus, complete, 4 casting-houses, fitted with cranes, &c.; 2 foundries, with air-furnace and cupolas, drying stoves, cranes, &c.; lift to furnaces, with railway and inclined plane from Canal Basin, worked by high-pressure engine, 20-horse power; blacksmiths' shopping, 4 hearths, carpenters' and patternmakers' shops, fitting-up shop, with lathes, driven by 4-horse power engine, and large store rooms.

The newly erected and excellently arranged MILL and FORGE comprises the following PLANT and MACHINERY—viz.:

ENGINE, 65-horse power, by J. and G. Davies, with hammer-squeezer, shears, and mine-crushing rolls, tram of 3 pairs of forge rails, sheet and plate rolls, corrugated iron rolls, heating and annealing furnaces, and 19 puddling furnaces—the whole in complete working order. Attached to this work is the GALVANIZING HOUSE, 105 feet by 45 feet, with pickling tanks, metal bath, 2 drying stoves, steam generator, warehouse, with clerks' office and machine house.

The surface land is in the occupation of Benjamin Gibbons, Esq., and others; there are also on the estate 2 desirable residences, Corbyn's Hall, with outbuildings, gardens, &c., in the occupation of Benjamin Gibbons, Esq., jun., and the Tiled House, with ample clerks' offices, stables and garden, suitable for managers' residence, now in the occupation of C. Woodcock, Esq., together with stabling and outhouses, sufficient for the horses employed on the property.

The estate is admirably situated, the Stourbridge Extension Canal and Standhill's Branch passing through the property, and having basins running into the centre of the works. The Kingswinford Branch of the Oxford, Worcester, and Wolverhampton Railway passes through the estate, which is surrounded by excellent turnpike-roads, and is intersected in all parts by tramroads belonging to the property, affording the greatest facility for conveyance, land sale, of coal, &c.

The property will be sold subject to the terms and conditions of the lease under which the same is held. The Tiled House property is held for a term of 21 years, of which 14 are unexpired, with a power of renewal for a further term of 21 years. The Corbyn's Hall property is held for a term of 56 years, from the 1st day of August, 1845, of which 52 years are unexpired.

The auctioneers earnestly beg to call the attention of the iron trade and capitalists generally to this valuable and most eligible property, which, from its situation and the superiority of its mines and erections, ranks among the first iron-works of South Staffordshire: they have also received instructions to state, that every reasonable advantage will be given to purchasers in the mode of payment, for which an extended period of time will be allowed, on proper security being given.

To view the property, and for further information, apply to Mr. Spencer, manager, Phœnix Iron-Works, West Bromwich; William Manders, mine bailiff, Darlaston Green Colliery; Mr. Woodcock, Tiled House, Kingswinford; Mr. Job Taylor, mine agent, Bromley, Kingswinford; Messrs. Westmacott and Pinniger, solicitors, 28, John-street, Bedford-row; Mr. Samuel Fry, solicitor, Walbrook, London; of the auctioneers, Stourbridge; or at the offices of the Galvanized Iron Company, No. 3, Mansion House-place, London; at which two latter places copies of the leases relating to Lots 2 and 3 are now lying for inspection.—Particulars of the property, with lithographed plans, will be distributed one fortnight prior to the sale, and may be had at the principal inns of the neighbourhood; *Herald* Office, Birmingham; *Mercury* Office, Liverpool; or at the above-named places of reference.

IMPORTANT TO CAPITALISTS.

VALUABLE SLATE VEIN IN THE MARKET.—The Proprietor of a valuable SLATE VEIN, or BED, covering an area of 63 acres, one-fourth of a mile in width, and rising to an altitude of fully 900 feet (the property of which is freehold), is desirous of obtaining a PURCHASER for the SAME, who will be allowed advantageous terms, with an assured certainty of ample returns for the needful expenditure required for carrying on extensive operations; and which, from the nature of the slate formation—stratum rising over stratum—ample space (with a deep fall) for rubbish deposit, free drainage, dispensing with the usual adjunct machinery, will not necessarily reach a tenth-part of the average working outlay of the generality of slate quarries. The Slate Vein, to which attention is drawn in this advertisement, is situated on the margin of a navigable lake, in Carnarvonshire, North Wales, within six miles (four of which is the post-road) of an excellent shipping port.

Carnarvonshire is noted as the great emporium of the slate trade, which affords constant and lucrative employment to thousands, at the same time enriching the proprietors.

The surveys of three eminent engineers have been followed up by reports of a highly satisfactory character as to the quality and quantity of this eligible slate formation, and may be had, with a view of the plan and sections, on application to Griffith Davies, Esq., Guardian Insurance Office, London; or Mr. W Dew, surveyor, Llangefni, Anglesea.

GLAMORGANSHIRE, SOUTH WALES.—TO BE SOLD, BY PRIVATE CONTRACT, the valuable FARMING and MINERAL FREEHOLD PROPERTY, called GELLYDOCHLITHE, in the parish of Cadoxton-juxta-Neath, containing about 150 Acres, upon which is situate a new and excellent RESIDENCE, well adapted for a Gentleman's family, together with convenient and extensive Offices and Farm Buildings, in a thorough tenantable state of repair. The late proprietor having recently expended upwards of £2000 in draining, dressing, and fencing the land, and rebuilding the House and Premises, the greater part of the Farm is in so high a state of cultivation as to yield an immediate profitable return without further expenditure. There are about 40 acres of plantation and wood land, which are to be taken by the purchaser at a valuation; and a right of pasture exist over an adjacent extensive common. This desirable property is situate on a gentle eminence, overlooking a most picturesque and well-wooded valley, through which flows the River Dylais (a beautiful rocky stream abounding with trout), which, with a contributory stream, forms an angular boundary to the property, which is well stocked with game. Being situate seven miles from the thriving seaport town of NEATH, through which the South Wales Railway passes, five miles from the Vale of Neath Railway, and within three miles of Ystradgunlais, and of the Ystalyferra, Tnisceedwin, and other important works in the Swansea Valley, great accommodation is afforded to the farmer; whilst to the MINERAL SPECULATOR those advantages are of very great importance; which, added to the circumstance of a branch line of railway passing near the property being in contemplation, and of the Neath and Swansea Canals being within a short distance, an opportunity rarely to be met with offers for investment, its Mineral Productions consisting of VEINS of the well-known ANTHRACITE COAL, lying near and within the north crop of the GREAT SOUTH WALES MINERAL BASIN, and also of numerous seams of IRONSTONE.

For further particulars, apply to Messrs. Steadman and Place, Guildhall-chambers, London.

TO CAPITALISTS.

EXTENSIVE IRON AND COAL WORKS in SOUTH WALES, containing about 2000 acres of minerals, TO BE SOLD, or LET, by PRIVATE CONTRACT.

The above are NOW IN OPERATION, and GOOD WORKING CONDITION, and comprise:—THREE BLAST FURNACES, FOUNDRY, &c., with powerful pumping and winding engines for working the coal and ironstone, the whole being in perfect order. The coal and ironstone are of most superior quality. The average make per furnace is equal to the quantity produced from any other two anthracite furnaces.

The IRON is extensively used in Staffordshire for boiler plates and steel, in Wales for tin plates, and in London and other extensive foundries for the strongest and most delicate castings.

The COAL is highly approved of for malting. A purchaser would be treated with on liberal and advantageous terms, and the purchase money might be paid by easy instalments.

Further information may be had on application to Messrs. Hughes, Kearsey, and Masterman, solicitors, 17, Bucklersbury, London.

NORTH WALES.—VALUABLE SLATE QUARRIES FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, those VALUABLE QUARRIES, called the CAMBRIAN SLATE QUARRIES, situate in the neighbourhood of FESTINIOG, in the county of Merioneth. They have for some time been in full operation, and producing a material of first-rate quality, at a comparatively trifling cost, being in the side of a mountain, water free, and not having more than from 10 to 12 feet "baring."—The above property is well worth the attention of capitalists, both from its position and capability of producing, at a slight additional outlay, an almost unlimited quantity of slates.—For particulars apply to

Mr. MICHAEL FORSTER, Mining Engineer, Conway, North Wales.

N.B.—These quarries are sufficiently opened out to develope both the quality of the slates and the capability of the extension of the works.

Conway, November 1, 1849.

SMELTING, OR OTHER COAL-CONSUMING WORKS.—PORT TENNANT, within the Harbour of SWANSEA, or RED JACKET, opposite to Briton Ferry, in the port of NEATH, offers very advantageous Sites for COPPER SMELTING, IRON, TIN, GLASS, PATENT FUEL, or other COAL-CONSUMING WORKS, with every convenience for shipping the goods there manufactured.

BITUMENOUS and FREE-BURNING COAL, in great varieties and inexhaustible quantities, as also STONE COAL, and STONE COAL CULM, may be delivered into the works by canal, at the lowest prices.

BUILDING-STONES, of every description, will be delivered by canal, free of carriage, at the lowest expense.

Application to be made to Mr. Kirkhouse, Neath, Glamorganshire.

N.B.—All vessels entering Port Tennant are liable to half dues only, under the last Swansea Harbour Act, and to no Corporation dues whatsoever.—The dues for Neath Harbour are of very trifling amount.

JOSEPH DEELEY, of the LONDON and NEWPORT IRON-WORKS, NEWPORT, MONMOUTHSHIRE, respectfully recommends to the notice of the public his PATENT FOUNDRY FURNACE, which has been effectually tested, and is now in constant use at the above works, where it may be inspected by all persons interested. This furnace operates without the aid of any motive-power to impel the air. An immense saving is the consequence, both in erecting and working. One-third of the coke usually required is more than sufficient; a loss of only 22 lbs. to the ton being sustained in smelting.

The IRON MELTED in this furnace also undergoes an extraordinary improvement in quality.

SCOTCH PIG and SCRAP are returned equal to the best cold-blast in point of strength, and capable of being chipped or filed with the greatest facility.

FOUNDRIES USING the FURNACE may exist in the most densely populated cities, without causing the least nuisance—all smoke, dust, and noise being entirely avoided.

The FOREIGN PATENT RIGHTS of the above are FOR DISPOSAL, affording capitalists the most favourable opportunity for profitable investment.

APPLY TO THE PATENTEE AS ABOVE.

DUISBURG IRON-WORKS AND MINES, *IN WESTPHALIA, CLOSE TO THE RHINE.*

Managed in England according to the principles of the "Cost-book System," and in Prussia as a *Société en Commandite*, under laws limiting the liability of the shareholders to their personal subscription.

Company's Offices, 28, Moorgate-street, City.

CWMBRAIN PATENT IRON REFINERY.—The PROPRIETORS of IRON FORGES and MILLS are respectfully INVITED to MAKE TRIAL of Mr. BLEWITT'S REFINED IRON, or METAL, PREPARED by a NEW PATENT PROCESS,

whereby the IRON is completely FREED from the IMPURITIES CONTRACTED in the BLAST-FURNACE, and, by judicious mixtures, rendered applicable to every kind of manufacture. Heretofore, the metal usually sold in the market has been produced from the worst pigs, scraps, and refuse of some particular blast-furnace, or set of furnaces, without any mixture, or any regard to quality, or the purpose for which it might be required. The PATENT METAL is PREPARED ON SYSTEM, and TO ORDER, for any of the following purposes:—

1. For BOILER and TANK-PLATES.
2. For TIN-PLATES, commonly called COKE-PLATES.
3. For STRONG CABLE BOLTS, RIVET, and ANGLE IRON.
4. This COMPOUND PUDDLED, beat under the hammer into a bloom, reheated, and rolled into a 6 or 6½-inch bar, makes TOPS and BOTTOMS for FLANCH and OTHER RAILS, of very superior quality, and attended with less waste than any other kind of iron used for that purpose. It is also well adapted for nail-rods, horse-shoes, and for other ordinary uses of the blacksmith.

The PATENT METAL is marked with a squirrel, and the initials "R. J. B.," and is to be had only at the "Cwmbrain Iron-Works," near Newport, Monmouthshire

TOUGHENED CAST-IRON—STIRLING'S PATENT.

No. 1—For SMALL and MEDIUM CASTINGS.
No. 3—For HEAVY CASTINGS.
No. 3 *(Extra)*—For ROLLS, HEAVY SHAFTS, and VERY HEAVY CASTINGS.

The above is by far the strongest Cast-Iron made, and is now being extensively used where strong castings are required.

Further particulars may be obtained on application to

Messrs. GARDEN & MACANDREW,
27, Queen-street, Cheapside, from whom also the IRON can be PROCURED.

STRUVE'S PATENT MINE VENTILATOR.

COST—£150.

TO COLLIERY PROPRIETORS.

Quantity of air passed through a Mine almost unlimited, to the extent of 250,000 cubic feet per minute, if necessary—depending on size of apparatus.

COST of an APPARATUS to produce a ventilation of 20,000 cubic feet per minute, ONE HUNDRED and FIFTY POUNDS, exclusive of patent right. This amount of ventilation would be sufficient for a mine working 150 tons per day, provided it was not very fiery; in which case it would be desirable to provide for 30,000 cubic feet of air per minute. The capabilities of the Ventilator may be doubled at any future time, at a comparatively small cost.

The Ventilator has been at work for upwards of six months at the Eaglesbush Colliery, near Neath, working under a rarefaction of 2½ to 3 inches of water, which demonstrates the impracticability of furnace ventilation, when the shafts are shallow and the airways small.—It is practical to rarify a mine by this ventilator to the extent of 2 feet of water, or 2 inches of mercury.

LICENSES will be GRANTED on application to

Mr. WILLIAM PRICE STRUVE, Swansea,
CIVIL ENGINEER AND MINERAL SURVEYOR.

TO THE OWNERS OF COLLIERIES, MINES, PLANTATIONS, SAW-MILLS, &c.

IMPROVED CIRCULAR SAWS, MILL-SAWS, FILES,

Machine Irons, and Cutting Knives, Steel in Blister, Bar, Cast, Shear, and Drift Steel, Springs for Railways and Common Roads, Iron Washers, Bolts, Hammers, &c., on the most PERFECT and ECONOMICAL PRINCIPLES, MANUFACTURED with DISPATCH, by

BLAKE AND PARKIN,
THE MEADOW STEEL-WORKS, SHEFFIELD.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISONISED MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.

Apply to HUTCHISON & CO.,
140, Strand, London; or Tunbridge Wells, Kent, and Caen, Normandy, stating name, address, and capital at command.

N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c. *LICENCES GRANTED.*

THE MINING ALMANACK for 1850: compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the especial sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in JANUARY next, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interests.—Names of subscribers are requested to be addressed to Mr. H. English, 5, Fleet-street.

WANTED, by a GENTLEMAN of many years' practical experience in the WORKING OF LEAD and other MINING CONCERNS, a SITUATION as MANAGER. First-rate references can be given.

Address, "J. C.," Post-office, Newcastle-on-Tyne.

ATMOSPHERIC AND LOCOMOTIVE ENGINES FOR SALE.

MR. STARLING is instructed by the Directors of the LONDON AND BRIGHTON RAILWAY COMPANY to Dispose of those HIGHLY-FINISHED ENGINES, by Messrs. MAUDSLY & Co., lately used on the ATMOSPHERIC RAILWAY.

Mr. S. has also for disposal several new and second-hand SIX and FOUR-WHEELED LOCOMOTIVES—particulars on application at his office, 13, Change-alley.

London, November 14, 1849.

STEAM-ENGINE FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, an 85-inch cylinder STEAM-ENGINE, 10-feet stroke, equal beam.—Application to be made to Messrs. Hocking and Loam, engineers, Redruth.

TO CONTRACTORS, AND OTHERS.—TO BE SOLD (a Bargain), A QUANTITY OF RAILWAY GREASE; now laying at Dorking, near London.—Apply to PICKFORD & CO.

LOANS ON DEBENTURES.—The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS of LOANS, in sums not less than £300.—Applications to be made or addressed to this office.

By order,
125, George-street, Edinburgh, May 30, 1849. D. RANKINE, Treasurer.

On Monday, will be published,

A LETTER to the SHAREHOLDERS of the NORTH BRITISH AUSTRALASIAN COMPANY, from JOHN HENRY MURCHISON.

By post, Eight-pence. Aberdeen: D. Wyllie and Son.

MINING PROPERTY.—Mr. JAMES HERRON, MINE AGENT, 33, CLEMENTS-LANE, LOMBARD-STREET, has received instructions to DISPOSE of SHARES in FIRST CLASS MINES, paying regular dividends, and yielding to the purchaser from 17½ to 25 per cent. upon his outlay. He is also in a position to transact business in the following—viz., South Basset, South Wheal Francis, Condurrow, West Buller, South Tolgus, Treriskey, West Caradon, East Wheal Rose, North Roskear, Trelawny, Mary Ann, East Tamar, South Tamar, Tincroft, Altens, East Crowndale, and Treleigh.

MR. T. A. READWIN, MINING OFFICES, 2, *WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.*

MR. H. B. RYE, has BUSINESS to transact, both as BUYER and SELLER in all the leading MINES in Cornwall, Devon, and Wales. For particulars, apply at his office, 77, Old Broad-street, City.

MR. GEORGE BATE, Jun., CIVIL ENGINEER AND SURVEYOR, *WOLVERHAMPTON.*

Offices in Queen-street, corner of Piper's-row.

N.B.—UNDERGROUND MINING SURVEYS accurately executed.

MR. R. TRIPP, MINING AGENT and SHAREBROKER, *BEDFORD CHAMBERS, BAMPFYLDE-STREET, EXETER.*

MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR. *No. 15, OLD BROAD-STREET, LONDON.*

JAMES LANE, MINING SHARE DEALER, 80, *OLD BROAD-STREET, LONDON.*

ALTEN MINING ASSOCIATION.—The Directors of this Association hereby give notice, that a GENERAL MEETING of the Shareholders will be HELD at the offices, No. 2, New Broad-street, on Friday, the 30th day of November instant, at One for Two o'clock precisely, for the purpose of receiving the Report of the Directors, and also a Statement of the Financial Accounts to the 31st of March last.

The accounts will be at the offices of the Association for the inspection of the shareholders three days previous to the meeting. EDWARD J. COLE, Sec.

Dated this 16th day of November, 1849.

ASTURIAN MINING COMPANY.—Notice is hereby given, that, pursuant to a Resolution of the Board of Directors and Liquidators, A SPECIAL GENERAL MEETING of the Shareholders of this Company, will be HELD on Tuesday, the 27th day of November, instant, at the Company's offices, 9, Austinfriars, London, to APPROVE OF, or DISSENT FROM, the ACTS and PROPOSALS of the Board of Directors and Liquidators, in respect to the LIQUIDATION, DISSOLUTION, or RE-CONSTITUTION of the Company; and to take into consideration such other proposals as may be submitted for such purposes, or such other matters as may relate to the general interests of the Company. G. COLQUHOUN, Chairman.

9, Austinfriars, London, Nov. 6, 1849.

ST. JOHN DEL REY MINING COMPANY.—Notice is hereby given, that the FIFTEENTH HALF-YEARLY DIVIDEND, being £1 5s. per share, on the shares of this Company, will be PAYABLE at this office on Saturday, the 8th of December next, and every succeeding day, between the hours of Ten and Four.

Forms for claiming the dividend may be obtained at the company's office, and must be left three clear days for examination previous to payment.

JOHN ROUTH, Managing Director.

8, Tokenhouse-yard, Lothbury, Nov. 19, 1849.

BEDFORD UNITED MINES.—DECLARATION OF DIVIDEND.—Notice is hereby given, that a FOURTH DIVIDEND of FIVE SHILLINGS per share, on the shares of these Mines, will be PAYABLE at this office on Friday, the 23d November inst., and on every succeeding Friday, between the hours of Eleven and Three o'clock. Those parties, who have not registered their Scrip Certificates, are requested to leave them at the office two clear days, in order that they may be examined and cancelled; and on the parties signing the Cost-book, agreeably to the Resolutions passed at the General Meeting, held on the 9th December, 1847, the dividends due 31st March and 22d December, 1848, 31st August and 23d inst., will be paid to them.

By order of the meeting of adventurers,
50, Threadneedle-street, Nov. 22, 1849. G. KIECKHOEFER, Secretary.

CAMERON'S COALBROOK STEAM COAL & SWANSEA AND LOUGHOR RAILWAY COMPANY.—Registered and Incorporated.—Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the registered Shareholders in the above-named Company will be HELD at the Company's offices, No. 2, Moorgate-street, London, on Thursday, the 6th day of December next, at One o'clock in the afternoon precisely, for the purpose of entering into a resolution to CALL for the remaining FOUR POUNDS per share of the capital of the Company, or to increase the capital or joint-stock of the Company to any amount to be specified in such resolution, by the issue or sale of such number of shares as may be determined on by such meeting. And notice is also hereby given, that, whereas the Directors have approved of, and resolved to recommend to the shareholders, the construction of a branch railway in connection with the railway authorised by the Company's Deed of Settlement, and Act of Parliament, 9th and 10th Victoria, chap. 401, which branch railway is to connect the Company's Colliery with the Port and Docks of Llanelly, the Directors will, at the said Extraordinary General Meeting, submit and recommend the construction or making of such branch railway to the said meeting, in order that the said meeting may come to a resolution to make such branch railway, or pass such resolution or resolutions in reference thereto as the said meeting shall determine.

And notice is hereby also given, that at the said Extraordinary General Meeting the Directors will submit for the approval and confirmation of the Shareholders, the terms of certain contracts between the Company and Edward Gamaliel Winthrop, Esq., John Barham, Esq., and James Smallbone, Esq., respectively, Directors of the Company, with reference to advances made by them respectively for the Company's use.

By order of the Board of Directors,
EDWARD G. WINTHROP, Chairman.
A. C. HOWDEN, Secretary.

Company's offices, 2, Moorgate-street, London, Nov. 17, 1849.

BICKFORD'S PATENT SAFETY FUSE.—The Patentees of the ORIGINAL, and only real, SAFETY FUSE, beg to inform Merchants, Mine Agents, Railway Contractors, and all persons concerned in Blasting Operations, that, for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY FUSE *has now a thread wrought into its centre*, which being patent right, infallibly *distinguishes it from all imitations*, and ensures the continuity of the gunpowder. The Safety Fuse is now protected by a Second Patent, and manufactured by greatly improved machinery. BICKFORD, SMITH, & DAVEY, Camborne, Cornwall.

THE PATENT OFFICE AND DESIGNS REGISTRY, *No. 210, STRAND, LONDON.*

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

THE DROITWICH SALT MANUFACTURE.—Droitwich has for some time past been in a very depressed state, owing in a great measure to the extensive failure of one of the salt manufacturers, and the stoppage of the supply of brine to the Messrs. Walter and J. Noak's works, as also to those of Mr. Benjamin Smith, which stoppage has driven them to sink for brine in other parts of the town. Mr. Smith having purchased some land at the back of Mr. Gabb's house, after having to contend with many difficulties from the persecution of persons in the salt trade and from natural causes, has overcome every impediment, and obtained an excellent pit of brine and in great abundance. It is cased with an iron cylinder, 4 feet 6 inches in diameter, and sunk 150 feet deep, with two bore-holes in it for the brine to come up, the one 4 the other 3½ inches in diameter; and, although one of them was not cleansed, so that it could do its work of conveying the brine into the pit, yet such was the force of the brine, that as soon as it had vent, the pit filled to the depth of 15 feet in two minutes, in the presence of many respectable inhabitants, who assembled to witness the operation, and in less than an hour was filled to the usual level. The Messrs. Noak are sinking their pit upon some land at the back of Mr. James Greaves's house, the Mitre Inn, where in a few days there is no doubt they will also meet with a good supply of brine. It was expected that each of these persons would have met with great opposition in the laying down of their cast-iron pipes in the public streets, in order to convey the brine from their pits to the salt-works, a distance of from 600 to 800 yards; but the inhabitants generally have learnt a better lesson from past events than to play into the hands of the Stoke Company by opposing such a proceeding, so long as the manufacturing of the brine into salt is confined to the town.—*Worcester Chronicle.*

THE RELATIVE MAGNITUDES AND DISTANCES OF THE PARTS OF OUR SYSTEM.—Choose any well-levelled field or bowling-green. On it, place a globe 2 feet in diameter, this will represent the Sun; Mercury will be represented by a grain of mustard seed seen on the circumference of a circle 164 feet in diameter for its orbit. Venus a pea on a circle of 284 feet in diameter. The Earth also a pea on a circle of 430 feet. Mars a rather large pin's head on a circle of 654 feet. Juno, Ceres, Vesta, and Pallas, grains of sand in orbits of from 1000 to 1200; Jupiter a moderate sized orange in a circle nearly half a mile across; Saturn a small orange on a circle four-fifths of a mile; Uranus a full sized cherry or small plum upon the circumference of a circle more than a mile and a half; and Neptune a good sized plum on a circle about two miles and a half in diameter. As to getting correct notions on this subject by drawing circles on paper, or still more from those very childish toys called orreries, it is out of the question.—*Herschel's Outlines of Astronomy.*

CHOLERA AND BOWEL COMPLAINTS.—Thousands have been saved by Dr. MACANN'S GRAND ELIXIR and TINCTURE. It was successfully prescribed by the late Dr. Macann, when the cholera raged at Bilston, in 1832, and has effected more cures in 1849 than all other medicines. One dose is generally sufficient to stop vomiting, purging, cramp, &c., and every family should have a supply in the house ready. The Grand Elixir is sold in bottles, 2s. 9d. and 11s. each, and the Tincture in bottles, 13½d. each, duty included.—Prepared only by THOMAS WHITE, chemist, Bilston, and sold by him, and by Barclay and Sons, 95, Farringdon-street; Drew, Heyward, and Barron, Bush-lane, Cannon-street; Hannay and Dietrichsen, 63, Oxford-street, London.—Wholesale and shipping agent, Mr. Wm. Bailey, Wolverhampton.—Beware of counterfeit preparations, and see that the Government stamp on each bottle has the signature of "T. WHITE," as none else is genuine. 35

ON NERVOUS DEBILITY AND GENERATIVE DISEASES.

Just published, the fortieth thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, by the Author, to any address, secure from observation, for 2s. 6d., in postage stamps, illustrated with numerous anatomical coloured engravings, &c.

MANHOOD: the CAUSES of its PREMATURE DECLINE, with plain directions for its perfect restoration. A Medical Essay on those diseases of the Generative Organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in youth, manhood, and old age; with practical remarks on marriage, the treatment and cure of nervous and mental debility, impotency, syphilis, and other urino-genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease; with instructions for private correspondence, cases, &c.—By J. L. CURTIS, consulting surgeon, 15, Albermarle-street, Piccadilly, London. 36

REVIEWS OF THE WORK.

We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, preceptor, or a clergyman.—*Sun*, Evening Paper.

J. L. Curtis, *On Manhood, and the Causes of its Premature Decline; with Plain Directions for its Perfect Restoration.*—[Strange, Paternoster-row.]—This is a book replete with valuable advice and information. It developes the fearful shoals on which a large proportion of human happiness is wrecked, and furnishes a chart by which they may be avoided and escaped. Fortunate for a country would it be, did its youth put into practice the philanthropic and scientific maxims here laid down. One cause of matrimonial misery might then be banished from our land, and the race of the enervate be succeeded by a renewal of the hardy vigorous spirits of the olden time.—*United Kingdom Magazine.*

Manhood: by J. L. Curtis and Co.—Their long experience and reputation in the treatment of these painful diseases is the patient's guarantee, and well deserves for the work its immense circulation.—*Era.*

Manhood: a medical work.—To the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the too rash indulgence of their passions—whilst to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health.—*Chronicle.*

Published by the author, and may be had at his residence; sold also by Strange, 21, Paternoster-row, London; Heywood, Oldham-street, Manchester; Howell, 16, Church-street, Liverpool; Robinson, 11, Greenside-street, Edinburgh; Campbell, chemist, 146, Argyle-street, Glasgow; Berry and Co., Capel-street, Dublin; and by all booksellers.

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PART THE FIRST treats of the anatomy and physiology of the reproductive organs, and is illustrated by six coloured engravings.—PART THE SECOND treats of the consequences resulting from excessive indulgence, and their lamentable effects on the system, producing mental and bodily weakness, nervous excitement, and generative incapacity; it is illustrated by three explanatory engravings.—PART THE THIRD treats of the diseases resulting from infection, either in the primary or secondary form, and contains explicit directions for their treatment. This section is illustrated by 17 coloured engravings.—PART THE FOURTH contains a prescription for the prevention of disease by a simple application, by which the danger of infection is obviated. This important part of the work should not escape the reader's notice.—PART THE FIFTH is devoted to the consideration of marriage and its duties. The causes of unproductive unions are also considered, and the whole subject critically and philosophically inquired into.

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BY SAMUEL LA'MERT, M.D., 37, BEDFORD-SQUARE, LONDON.

Doctor of Medicine, Matriculated Member of the University of Edinburgh, Licentiate of Apothecaries' Hall, London, Honorary Member of the London Hospital Medical Society, &c.

REVIEWS OF THE WORK.

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THE ELECTRIC TELEGRAPH IN AMERICA.—By the last arrivals from New York, we learn that the celebrated telegraph case of Morse *v.* O'Reilly had just been decided by the Supreme Court of the United States, before a justice of the court for the state of Kentucky, in favour of Mr. Morse. There can now be no doubt whatever, that he will be able to stop all competition in telegraphing, except that which Mr. House has patented—the printing telegraph.—A correspondent says—"Mr. Bain's projects will also be endangered by a suit brought against him by Mr. Morse, as well as the originality of his invention, for making marks by the action of the electric fluid on paper prepared with a chemical solution. Mr. Morse proves that more than twelve years ago he had a working instrument on the same principle in his rooms at the university, and abandoned it for his present plan. He also produced a printed account of the plan, published in a daily paper in this city some years ago, before Mr. Bain made his own public. The ground is, therefore, narrowed down here to Morse and House, and these will, probably, share the public favour equally. I observe, with surprise, that in the last number of the *Edinburgh Review*, where the subject of electrical communication is treated of at large, there is a studied silence on the subject of the American inventions, and whether to attribute this to a real or pretended ignorance of their character, I am at a loss. At all events, you may expect to see the *New York Courier* and *Inquirer*, and, indeed, the leading journals of the country, replying to the article with no little warmth. I inferred, from reading it, that it was written by some person who had derived his knowledge of the subject generally at a very recent date, and principally at second hand. At the recent meeting of the British Association, the discussion on the electric telegraph was much more fair, since it was admitted that the system of deflecting needles was liable to very serious objections. And this is truly the case. Both in Morse's and House's system, the action of the recording instruments is simple and unmistakeable. The other day, some of our telegraphic operators amused themselves by beating the time of various tunes at the distance apart of several hundred miles, and they did it with such accuracy that they were perfectly intelligible, even to the bystanders. In a very short time we shall have a continuous line from New York to Halifax, and as long as the Cunard steamers stop there it will be of great advantage to the newspaper press on both sides of the water. The telegraph has now become a most important agent of communication in this country, and large amounts of business are transacted by its means. I think the time is very near at hand when the American systems will supersede all the others now in use."

EXTENSION OF THE ELECTRIC TELEGRAPH.—The lines of communication by the electric telegraph have now been so extended as to embrace all the principal towns of the United Kingdom, which to the commercial interest will prove highly important. There are two central stations—Lothbury, and the General Post-office, St. Martin's-le-Grand—with branches in Euston-square, Eastern Counties Teminus, Shoreditch; South-Western, ditto, Waterloo station; Great Western, ditto, Paddington; and the office, Strand. The wires of the telegraph on the various lines are carried under the streets, and concentrated in Lothbury. The establishing of a central station at the General Post-office has proved most useful to the Postmaster-General, in receiving information of the instant arrival of any of the foreign mails at Southampton, Liverpool, and Falmouth, and their departure, as well as for the transmission of orders connected with that important public department. The following are the places to which messages can be transmitted at the rate of 1d. per mile (for 20 words) for the first 50 miles; ½d. for the second, ditto; and ¼d. per mile for any distance beyond the 100 miles:—Acklington, Alne, Alnwick, Ambergate, Apperby, Ardleigh, Ashchurch, Attleborough, Audley-end, Aycliffe, Ayton, Barking-road, Barnsley, Beeston, Belford, Belmont, Belper, Bentley, Berwick-on-Tweed, Beverley, Birmingham, Bishopstoke, Blackwell, Bradford, Braintree, Brandon, Brentwood, Bridlington, Brick-lane, Brockley Whins, Brockenhurst, Bromsgrove, Brough, Broxbourne, Burton-on-Trent, Calverley, Cambridge, Castleford, Chelmsford, Cheltenham, Chesterfield, Chesterford, Chittisham, Church-fenton, Claycross, Cockburnspath, Colchester, Colwick, Countesthorpe, Cowton, Crewe, Croft, Darlington, Derby, Dereham, Dorchester, Driffield, Droitwich, Dunbar, Durham, Estrin, Eckington, Edinburgh, Edmonton, Elsenham, Ely, Ferry-hill, Flaxton, Gateshead, Glasgow, Gloucester, Gosport, Granton, Grantshouse, Haddington, Halifax, Harecastle, Harling-road, Harlow, Helpstone, Hertford, Howden, Hull, Ilford, Ingatestone, Ipswich, Kegworth, Keighley, Kildwick, Kelvedon, Kirkstall, Leeds, Leicester, Leith, Lesbury, Lincoln, Linlithgow, Linton, Liverpool, Longport, Long Stanton, Longton, Loughborough, Lowestoffe, Maldon, Malton, Manchester, Manea, Manningtree, March, Masbro, Melton, Mildenhall, Milford, Morpeth, Newark, Newcastle, Newby, Newmarket, Newport, Normanton, Northallerton, Norton-Bridge, Norwich, Nottingham, Oakenshaw, Peterborough, Ponder's End, Poole, Portsmouth, Rillington, Richmond, Ringwood, Rochdale, Romford, Rotherham, Roydon, Royston, Rugby, Scarborough, Selby, Sheffield, Shipley, Skipton, Slough, Southampton, South Shields, Stamford, Staveley, St. Ive's, St. Margaret's, Stoke-upon-Trent, Stone, Stortford, Stratford, Sunderland, Swinton, Tamworth, Thetford, Thirsk, Todmorden, Tottenham, Tretham, Tring, Tweedmouth, Ullesthorpe, Uttoxeter, Wakefield, Waltham, Ware, Washington, Watford, Willington, Wisbeach, Wolverhampton, Wolverton, Woolwich, Worcester, Wymondham, Yarmouth, York, &c. By the South-Eastern and Brighton Railway, the telegraph is laid down to Dover, Folkestone, Margate, Ramsgate, Deal, Gravesend, Brighton, Portsmouth, &c., so that the electric telegraph now extends nearly from one end of the country to the other.

FALL OF SEVEN RAILWAY ARCHES AT CAMDEN-TOWN.—On Sunday morning, about half-past seven o'clock, the inhabitants of Camden and Kentish Towns were alarmed by a noise of a most extraordinary character, and so loud, that the attention of the police on duty, at a distance of more than a mile round, was attracted to it. It was soon ascertained that the noise referred to was the result of the falling of no less than seven of the newly-constructed arches of the East and West India Docks and Birmingham Junction Railway. The spot where the occurrence took place is situate on the western side of the Kentish Town-road, and but a short distance from the junction of the line with the London and North-Western Railway at the Camden station. It appears that the contractor for the works of this portion of the line is Mr. Hicks, and on Saturday night the whole of the works were left in an apparently safe condition. About half-past five the watchman on duty was alarmed by hearing a cracking noise, as he thought, proceeding from the arches; and as the noise continued and increased, he felt it his duty to send for Mr. Stansfield, the foreman of the works. On the arrival of that gentleman, he observed there was an evident settlement and cracking of some of the arches. About the time abovementioned the seventh arch from the bridge which crosses the Kentish Town-road, gave way, and the six others followed in rapid succession, and with a fearful crash. The greatest fears were entertained that the stupendous arch which crosses the Kentish Town-road would follow; but the solidity of the structure, with the exception of a slight cracking of the brickwork on the western side, withstood the shock. The state of the arch, however, is considered sufficiently dangerous to induce the contractor to adopt the precaution of preventing either foot passengers or vehicles passing under it, barriers having been erected and police stationed on either side to prevent it. The arches which have fallen are from 20 to 30 ft. span, and the first symptom of cracking observed was in the face of the spandril walls. It was rumoured that the accident had resulted from a too speedy striking of the centres of the arches; but on instituting inquiries, it was ascertained that this was not the fact—the centres, which were removed about eight or nine days ago, having remained up for more than one month under each of the fallen arches after completion. The contractor and others are wholly unable to account for the catastrophe, as they allege that the construction was upon the most approved principle, and of the best materials and workmanship. It is a fortunate circumstance that the occurrence took place at the time it did, or the loss of life might have been immense, a large number of workmen being on week days employed in placing the ballast over the arches, and others in erecting the massive stone-work cornices along the spandril walls. Moreover, on Saturday night, at six o'clock, Mr. Hicks's men, 70 or 80 in number, were paid in a small wooden counting-house under the very arch which first gave way, and were then assembled to receive their money. Had the fall taken place at that time, the loss of life would have been immense. The loss sustained by the occurrence is estimated at about 2000*l.* News of the occurrence soon spread throughout the northern districts of the metropolis, and notwithstanding the state of the weather, the spot was visited by hundreds of persons.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Royal Botanic—Inner Circle, Regent's Park	3½ P.M.
	Westminster Medical—17, Saville-row	8 P.M.
MONDAY	Geographical—3, Waterloo-place	8½ P.M.
	Medical—3, Bolt-court, Fleet-street	8 P.M.
TUESDAY	Medical and Chirurgical—53, Berners-street	8½ P.M.
	Civil Engineers—25, Great George street	8 P.M.
	Zoological—11, Hanover-square	8 P.M.
WEDNESDAY	Society of Arts—Adelphi	8 P.M.
THURSDAY	Antiquaries—Somerset-house	8 P.M.
FRIDAY	Royal—Somerset-house	8½ P.M.
	Botanical—20, Bedford-street, Covent-garden	8 P.M.

INSTITUTION OF CIVIL ENGINEERS.

NOVEMBER 20.—JOSHUA FIELD, Esq., (President) in the Chair.

The discussion upon the Grimsby Docks being continued, the speakers, led by the Very Rev. the Dean of Westminster, in his usual able and energetic manner, were induced to diverge very widely from the original subject, to point out the acknowledged advantages that would result from engineers possessing a more accurate knowledge of geology, and being able to discriminate between strata by an examination of the component parts, and to decide upon their origin, as a guide in judging of their capability of supporting the weights likely to be placed upon them in the construction of works.

The Rev. Dean gave many instances where, in his opinion, more accurate geological knowledge would have secured greater success, or have prevented casualties. He quoted particularly the borings and the report said to have been made previous to the commencement of the Thames Tunnel, and the recent statement, that the projected tunnel for receiving and conveying the sewage of London down to the Essex marshes, would, throughout its entire length, have been in the London clay. He shewed, however, that no London clay was to be found eastward of St. Paul's, and that the plastic clay was constantly mistaken for it, in consequence of the observers not possessing a sufficiently accurate knowledge of the difference in the constituent features of the two clays.

On the other hand, although it was admitted that an accurate knowledge of geology was most valuable to engineers, it was contended that they were not so ill-informed on the subject as had been assumed; they did appreciate the necessity of that knowledge, and although they might not be able to discourse upon it with the eloquence of a Buckland, a Lyell, or a Sedgwick, or to speculate so plausibly upon the events of past ages, no careful engineer ever decided upon the position, or mode of construction of his works, without a series of trial borings, a careful examination of the specimens, and experiments on them, chiefly with the view of ascertaining their strength, or capability for sustaining weights. Instead, therefore, of accusing engineers of knowing so little, it was rather a subject of surprise that they knew so much; for no profession demanded such varied acquirements, or the exercise of such general common sense and judgment. It was shown that the position of the Thames Tunnel was not determined by the report, or the results of the borings, but with a view to establishing a connection between particular localities. The borings were, perhaps, inefficiently made, as compared with those of the present day, with the improved apparatus now in use; but Mr. I. K. Brunel had made a very complete series of borings across the Thames, shewing most accurately the strata of the bed, and no errors could have been induced by them. The statement of the proposed sewer tunnel being in the London clay, never had been accepted by eminent men, who understood their profession, however it might have been argued upon, as an assumed fact, by commissioners and boards of sewers.

The discussion was closed by the Dean of Westminster giving an example of the urgency for engineers becoming geologists; and on Mr. Rendel stating that the clay at Leith was so hard as to require to be blasted, and yet that, when exposed to a small current of water, was completely dissolved within a fortnight, he at once explained it, as arising from the presence of a multitude of minute particles of mica, whose non-adhesive properties produced the speedy disintegration of the mass. This was admitted to be the fact, and had been observed and allowed for by the engineer in the construction of the works.

The paper announced to be read at the meeting of Tuesday, November 27, was "An Account of the Southend Pier; and Notices of the Ravages of the 'Teredo Navalis,' in Timber Structures," by Mr. John Paton.

SOCIETY OF ARTS—Nov. 21.

A paper from Mr. Smith, on the subject of floating breakwaters and light-houses, was read, and models of the invention exhibited. Its principle consists in breaking the force of the waves by elasticity, instead of, as in the case of stone breakwaters, by the mass of inert resistance. The advantage of the plan consists in the saving of expense, which, if the material used were wrought iron (as preferred by the inventor), would be only one-twentieth part of that of stone, and if timber, one-fiftieth. The method is by securing the breakwater at bottom to screw piles (if raised on a hard bottom), or atmospheric piles (if raised on a quicksand), and at top to iron chains, the ends of which are fastened to piles driven into the bottom, thus allowing the fabric to sway to and fro with the shock of the waves. In the construction of light-houses, the little turret or box, containing the light, is placed on a circular framework of beams or rods, converging inwards, so as to meet nearly in a point at the bottom, which is secured by the screw pile; this framework being likewise supported by an outer system of beams or rods, inclined like the stays of a mast, and moving easily with the bias of the surges. The fabric would, of course, be stationary when the sea is quiescent, rolling like a ship when blowing, but even in the heaviest gales the inclination would not exceed a few feet. Wrought iron was recommended from its capability of resisting the effects of the sea water, as shown by the guns of the *Edgar*, which had been immersed for nearly 300 years, whilst the corrosion had not penetrated more than a quarter of an inch deep. The diameter of the rods might be three inches, which would give a strength equalling that of the thickest and heaviest cables in use in the British navy. Several members expressed their admiration of the invention as one of the most beautiful contrivances ever brought under the notice of the society, and the chairman expressed the obligations of the meeting to Mr. Smith, for directing attention to so important a subject.

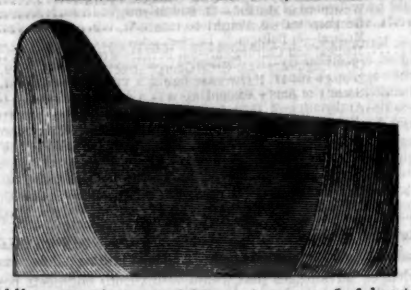
BOILER EXPLOSIONS.—(*From a Correspondent.*)—In an account of a boiler explosion, attended with loss of life, which took place in the neighbourhood of Heaton Norris the other day, it is stated that the boiler had been very recently repaired, and was considered in good working order. The jury returned an open verdict, not assigning any cause for its explosion. Now, there are two things to be particularly observed. First, that it occurred just at starting time Second, that there is no evidence that the safety-valves were overweighted. As regards the first, it will be found, on referring to the reports of the explosions which have, unfortunately, been so frequent, that nearly the whole of them have taken place at, or just previously, to the time of starting. This is now so generally admitted to be the case, that further comment thereon is unnecessary. As regards the second, I submit that the ordinary safety-valve is merely a delusion and a snare; and neither is, nor never was, capable of preventing such catastrophes. As a proof of my assertion, allow me to ask, how is the weight on the safety-valve disposed of when the steam has risen above the ordinary pressure? Is it not doubtless resting upon it, and opposing its free egress? Were it otherwise, why is "boiling over" of such frequent occurrence as to cause many mill-owners to substitute the "force-pump" for the ordinary "feed-pipe?" or, why do engineers on steam-packets remove part of the weight on approaching the shore, and replace it when leaving? It is evident to every reflecting mind that such an apparatus is not a *safety* one. And any person may prove this practically by seeing whether the valve, when in working order, prevents the steam from rising above the required pressure. I will now proceed to give my reasons for the occurrence of such accidents. The engineer always provides good fires and full pressure of steam for gating with. Now, it frequently happens that something arises to prevent the engine being started at the time appointed. During this delay the steam is rapidly rising, and having no effectual means of escape, we need not be surprised at the bursting of the boiler. To meet such and other emergencies, a method has been invented by which the safety-valve is made to rise fully open when the steam has risen the slightest degree above the ordinary pressure, and to close immediately on the escape of such overplus. This apparatus I have seen at work in a mill at Heaton Norris, and think it answers the purpose most admirably.

THE IRON TRADE.—The last half-year, ending at the close of September, presents a very gratifying result, as regards the shipment of iron (chiefly rails); the amount of exports being much larger than in any previous six months since the opening of the dock; whilst many of the finest merchantmen that ever entered our river, recently afforded a pleasing illustration of the working of Free Trade. These ships, which had been freighted with bread stuffs to Liverpool, instead of conveying back, as was anticipated by the opponents of the great measure, our sovereigns, returned to America, loaded with the mineral wealth of our hills, converted into first-rate rails for the lines of the New World. The following are the quantities shipped in the dock alone during the period mentioned, independently of the large quantities put on board at the private wharfs. Quantity of iron shipped from Newport Dock, for six months, ending Sept. 30, 1849:—April, 3337 tons; May, 6902; June, 11,400; July, 10,786; August, 14,734; September, 8043; total, 55,212 tons. This quantity of iron, suppose it was all rails, at the weight of 55 lbs. to the yard, would only lay about 640 miles of single railway. This calculation will enable our readers to form some idea of the enormous quantity of rails which will be required to form the grand trunk line of railway through our vast territorial possessions in India, the greater part of which must be taken from this district.—*Monmouthshire Mer.*

A wheelwright, at Upwell, professes to have invented a machine, a combination of wheels, requiring no power to drive it, and which will work unceasingly until worn out.

THORNEYCROFT'S PATENT RAILWAY AXLES, RAILS, AND TYRES.

RAILWAY TYRE.—Section No. 1, Half Size.

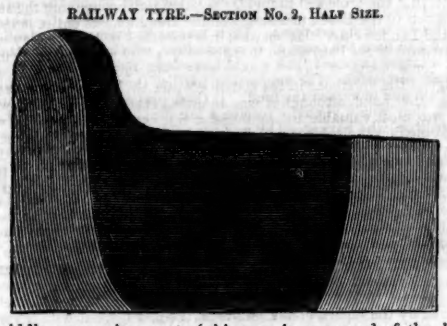


The middle, or wearing, part of this tyre is composed of chrystaline charcoal iron, the hardest and soundest iron made. The outward edges are made from a mixture of India charcoal pig with the toughest fibrous iron—the whole made upon an improved principle into one homogenous mass.

These charcoal tyres are warranted better and more durable than any tyres made in England.

Price—£15 per ton net at the works, up to 3½ cwts. each.

RAILWAY TYRE.—Section No. 2, Half Size.



The middle, or wearing, part of this tyre is composed of the best refined chrystaline puddled iron.

The outward edges are of the best No. 3 fibrous iron, and put together upon an improved principle into one homogenous mass.

These tyres are warranted quite equal to any made in Staffordshire.

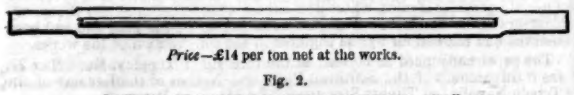
Price—£10 10s. per ton net at the works, up to 3½ cwts. each.

BEST STAFFORDSHIRE TYRES—£8 10s. per ton at the works, up to 3 cwts. each.

Fig. 1.

SECTION OF BRIGG'S PATENT COMPOUND AXLE.

Scale ½ inch to a foot: parallel axle.



Price—£14 per ton net at the works.

Fig. 2.

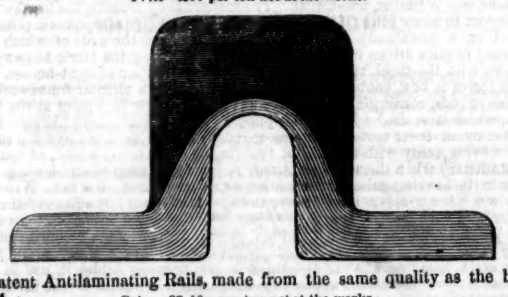
SECTION OF BRIGG'S PATENT COMPOUND AXLE,

Showing the extent to which the internal bar is welded solid at each end, drawn down in the middle half an inch.

Price—£15 per ton net at the works.

PATENT ANTILAMINATING CHARCOAL RAIL.—Section No. 1, Half Size.

Price—£10 per ton net at the works.



Patent Antilaminating Rails, made from the same quality as the best S & B iron. *Price*—£7 10s. per ton net at the works.

The upper, or wearing, part of these two sections of rails is made from antilaminating charcoal iron, much harder than any other iron, perfectly free from lamina. The under, or fibrous, part from best No. 3 puddled iron.

PATENT ANTILAMINATING CHARCOAL RAIL.—Section No. 2, Half Size.

Price—£10 per ton net at the works.

Patent Antilaminating Rails, made from the same quality as the best S & B iron. *Price*—£7 10s. per ton net at the works.

Rails of the same sections are made from puddled iron, quite free from lamina in the wearing part, but soft and less durable than charcoal rails.

This principle is applicable to any kind of rails.

I beg to inform the railway public, that the machinery for testing the strength of axles, and the strength and soundness of the tyres, is now ready; and I offer it to the public without any charge for its use, to try any one's make of axles and tyres they may think proper. A machine has been designed, and is now making by Messrs. Fox, Henderson, and Co., for proving the quality and durability of tyres and rails by actual wear and tear, the same as when at work on a railway, at any speed you like. The name of the designer is, I trust, a sufficient guarantee for its efficiency; in fact, it will be so true a test, that it must prove satisfactory to the most fastidious mind; and, so soon as it is completed, it shall be offered to the public, on the same terms as the testing machine above-mentioned.

Shrubbery Iron-Works, Wolverhampton. G. B. Thorneycroft.

ON RAILWAY AXLES.

In the *Mining Journal* of the 3d instant we published a paper, by Mr. M'Connell, on Railway Axles, read at the Institution of Mechanical Engineers, Birmingham, on which an interesting discussion took place, which we now subjoin:—

The Chairman (Robert Stephenson, Esq., M.P.) said, that Mr. M'Connell had expressed a strong opinion that a change took place from a fibrous structure in iron to a crystalline one during the time of its being in use; and it would be satisfactory if an instance could be pointed out where this change had occurred, owing to vibration, or any other treatment, for he had not been able to satisfy himself, from many experiments, that any such molecular change took place. Hammering a piece of hot iron till it is cold, produced a hardness called crystalline; but the question for consideration was—supposing an iron axle were annealed by heating to a dull red heat, and being allowed to cool slowly, would the "texture" of that iron undergo any alteration afterwards from the vibration of the railway, or any piece of machinery they were in the habit of employing? He had not been able to detect an instance of the kind; and in giving evidence before the iron girder bridge commission, he mentioned cases of vibration going on from year to year without any sensible change occurring in wrought or cast-iron. For instance, they had the Cornish engine beam, with a strain of 50 lbs. per inch, working eight or ten strokes per minute for more then 20 years; and certainly, if a molecular change was introduced by vibration, it ought to be by that continual concussion and vibration, but none was perceived. Again, the connecting-rod of a locomotive was a piece of iron in a most perplexing situation, for one having more to do, and having the strain changed more frequently, it was difficult to conceive; and yet he had known the connecting-rod of a locomotive engine to vibrate eight times in a second for several years' regular work, making more than 200,000,000 times altogether, but the iron retained its fibrous structure; and he thought axles could not be subject to so much vibration. When, therefore, he found that a connecting-rod did not change its molecular texture, he must say there were good grounds for doubting that iron changes its state in axles. Then, with regard to the experiments made by Mr. M'Connell, with a view to ascertain where axles were most exposed to tension, he could not quite agree with him, for he subjected the wheels and axles to a slow steadily-increasing pressure, till he bent the axles in different positions. The results were correct as far as regarded the slow pressure on the flanches of the wheel under the circumstances of the experiments recorded by him, but they were not a faithful representation of what takes place in practice; for it would be found that, when the wheels of a carriage jarred, a violent blow was inflicted on the rail, and the strain on the axle was totally distinct from a slow pressure. He would refer to the experiments made some years ago by Mr. John Gray, on the Hull and Selby Railway, to show how important is the element of time in the fracture of an axle. He took a round bar of iron, 3 ft. long, and 2 in. diameter, and turned it down in the middle, to 1 inch in diameter for 2 inches in length. He then took another bar, 1 inch in diameter, uniformly throughout, and he tried the strength of these bars under *concussion*, and not mere pressure. Now, the severest point of strain would evidently be the middle of the bars where the diameter was the same in both, and, consequently, if weights were gradually and quietly laid on, the results would be alike in both bars; but when small weights were let fall on them, the bar, 1 inch in diameter throughout its whole length, was found to be much stronger than that which was in the main 2 inches, and 1 inch in the middle. For as time is an element when the resistance of material is concerned, regarding the axle as elastic, like a piece of India-rubber, the only particles that could yield to percussion from the falling weight were those between the shoulders in the part of the axle that was turned down; but in the case of the bar an inch in diameter throughout its whole length, the whole of the particles would yield—the one being a good spring, and the other a very bad one. It, therefore, appeared to him, that the experiments recorded by Mr. M'Connell, though correct as regarded the position in which he put them, were not correct as regarded concussion. The axle rarely, if ever, broke in the middle, but generally at the end close to the boss of the wheel, because of the sudden change in the elasticity of the axle at that point—the portion of the axle fixed within the boss of the wheel being very rigid, while the rest remained elastic, which caused the vibrations to be suddenly checked at that point. No doubt the plan of weakening axles in the middle had done good, because it made them spring, and in crank axles it relieved the strain in the cranked part.

Mr. Henry Smith suggested that, in the case of bar-iron, the exterior portion had greater tenacity than the interior, or under part, and the strength would be more than proportionately diminished where the exterior portion was cut through. He also referred to some experiments in which he had cold-hammered fibrous iron till it became crystalline, and the effect produced corresponded with the description given by Mr. M'Connell of the fractured axles.

Mr. M'Connell observed, that he had met with several cases of broken axles in which a distinct annular space was observable all round the surface of fracture that was quite short-grained, and appeared changed into a crystalline texture, whilst the centre of the axle remained fibrous. He admitted that his experiments were only approximate, and that he had not put the strain in the natural way; but it was almost impossible to do so, in consequence of the great trouble and expense that would have accompanied it; at the same time, the results were proportionate in each case, and the accuracy of the experimental results had been confirmed by calculation. With regard to the axle fitting into the wheel, they now allowed only a very small shoulder, not exceeding a sixteenth of an inch, and this shoulder was not square, but tapered, and the boss of the wheel was slightly coned to fit the shoulder.

Mr. Cowper did not believe that any axle which, when broken, proved to be crystalline, had ever been fibrous in its character.

Mr. Ramsbottom considered that a change took place in the axle from the effect of mere mechanical action, and his observations had tended to confirm him in that opinion. Some time ago he selected an axle which had not a very good form of journal, and the end broke off with two blows of a 12 lb. hammer. This axle had for three years been subject to a strain vertically, which was reversed at every revolution, and it came off with a crystalline fracture. He then tried the part that had been within the boss of the wheel, which had not been subject to this great strain, and found the strength was very much greater than that of the journal, for it required 79 blows to break it off, and in that case the fracture was fibrous. A parallel case might be observed with reference to an ash stick, which, if doubled, would break with a fibrous fracture; but, if subjected to vibration, however slight, running through it a great number of times, it would break in a different mode. He thought the strain on a locomotive connecting rod was by no means so great for the sectional area as upon an axle journal; and the latter had two reversed strains for every revolution of the small wheels, but the connecting rod had only two for each revolution of the driving wheels.

The Chairman said, he was only desirous to put the members on their guard against being satisfied with less than incontestible evidence as to a molecular change in iron, for the subject was one of serious importance, and the breaking of an axle had, on one occasion, rendered it questionable whether or not the engineer and superintendent would have had a verdict of manslaughter returned against them. The investigation hence required the greatest caution; and in the present case there was not evidence to show that the axle was fibrous beforehand, but crystalline when it broke. He, therefore, wished the members of the institution, connected as they were with the manufacture of iron, to pause before they arrived at the conclusion that iron is a substance liable to crystallise, or to a molecular change, from vibration. For his own part, he was now induced to look upon wrought-iron as literally elastic, like a piece of India-rubber; for in the case of the Britannia tubular bridge, where they had two 10-inch square chains or bars, each 100 feet in length, it was found that before the tube was raised, the chains or bars stretched nearly two inches in length at each time of lifting, but resumed their original length when the strain was withdrawn; the same action being repeated every time the tube was lifted. He could, therefore, only regard these 10-inch bars of iron as analogous to a piece of India-rubber.

Mr. M'Connell said, he had one specimen of an axle which, he thought, furnished nearly incontestible evidence of the truth of his position, that a change took place in the texture of the iron. One portion of this axle was clearly fibrous iron, but the other end broke off as short as glass. The axle was taken and hammered under a steam hammer, then heated again, and allowed to cool, after which they had to cut it nearly half-through, and to hammer it a long time before they could break it.

The Chairman remarked, that this was a case of converse reasoning; for it was an instance of a piece of crystalline iron being converted into fibrous iron. Iron, when it was once heated, and allowed to cool gradually, acquired a close and fine grain, but it became neither crystalline nor fibrous; if cooled suddenly, it acquired a crystalline grain, and if rolled while being cooled, it became fibrous; but he did not think that it underwent any molecular change from mechanical action after it was cold.

Mr. Henry Smith observed, that throwing cold water upon hot journals did great injury by crystallising that portion of the axle.

Mr. Slate did not think that any change from a fibrous to a crystalline texture was produced in iron, unless it were strained beyond the limit of its elasticity.* Some of the pump-rods in Staffordshire, which had been in use for 18 or 20 years, were subject to a strain of 3½ tons per square inch; and a short time ago he had occasion to ascertain their actual performance with reference to this very question; and this not being considered conclusive, he had made a machine, in which he put an inch square bar, subjected to a constant strain of 5 tons, and an additional varying strain of about 2½ tons, alternately raised, and lowered, by an eccentric, 80 or 90 times per minute, and this motion was continued for so long a time that he considered it equal to the effect of 90 years' railway working, but no change whatever was perceptible; and, therefore, he was one of those who did not believe in a change from a fibrous to a crystalline structure in iron. He remembered a case where a question having arisen as to the manufacturers of a certain shaft, it was agreed to hammer it until it split, as a means of discovering the nature of the manufacture of the shaft; the result was satisfactory; and the iron even then appeared still fibrous in texture.—Mr. Henry Smith having promised to furnish some results of cold hammering iron, at the next meeting, the further consideration of the paper was adjourned.

The London and North-Western and Great Western Railways.—A pamphlet has just been issued, in the shape of a letter to the shareholders of these companies, proposing certain combined arrangements, which the writer believes would be highly advantageous to both companies. It is pointed out that the prospect which at present weighs down the Great Western is the approaching completion of the Birmingham and Oxford, and Birmingham, Dudley, and Wolverhampton purchase in 1850, involving, for the sake of a traffic that can only be worked in competition with the North-Western Company, the necessity of raising a large sum in preference stock, and also the fulfilment of the parliamentary stipulation for a general reduction of fares, while the London and North-Western Company would, of course, suffer in a like degree from the opposition thus engendered. The remedy suggested is, that the contention between the two companies should be forthwith ended by the North-Western becoming the owners of the Birmingham and Oxford, and Birmingham, Dudley, and Wolverhampton lines, and either the owners or lessees of the Oxford and Rugby line, in whose hands it is alleged a very large amount would be saved in works, and in the avoidance of duplicate stations. The total charge of the lines, it is proposed, should be divided equally between the two companies, and in consideration of this, the North-Western should provide a junction link with the Great Western, near Wormwood Scrubs, where the lines are only half a mile apart, and lay down the mixed gauge from thence, so as to bring the broad gauge passenger traffic to Euston-square, and the goods traffic to Camden-town, arranging also for the transmission of the latter by the East and West India Dock branch to the Thames. By this means, it is argued, the North-Western would extinguish a severe competition, and the Great Western would gain all the additional traffic that is now lost to them through the inconvenient situation of their London terminus, while considerable permanent economy would be secured to both. Should the pecuniary terms suggested—namely, the division of the cost of the new lines between the two companies—not be found precisely fair upon a review of the relative advantages, the question in that respect could be easily adjusted. It is the general plan, with the view of putting an end to the expense and contention, to which the writer professes himself desirous of inviting the consideration of the shareholders.

Oxford and Worcester Extension Railway.—The winding-up of this company's affairs came on before the Master in Chancery (Sir George Rose) on Thursday, at his court, in Southampton-buildings, Chancery-lane, upon the petition of Mr. Morris, one of the provisional committee, who states that the company was projected in 1845, with a proposed capital of 2,250,000*l.*, in 112,500 shares of 20*l.* each, deposit 2*l.* 2s. per share, with branches to Chester, Shrewsbury, and Northwich. A large number of persons took shares; and considerable sums of money, to be accounted for, came into the hands of the provisional committee. As sufficient capital could not be procured, the scheme was abandoned in 1846, and the company was dissolved under Lord Dalhousie's Dissolution Act. Petitioner states that he has been sued for a debt of 1792*l.*, and has paid a portion thereof, and prays that the subscribers to the scheme may be called on to contribute their proportion towards paying offoutstanding liabilities. The Master accordingly proceeded with list No. 1 of contributories, containing the names of those (178 in number) who had signed the subscription contract, and settled it to the extent of 90.

Rugby, Warwick, and Worcester.—In the winding up of this company's affairs, before the Master in Chancery, Richards, on Monday, a long argument took place on the part of Messrs. James and Roxburghe, who appeared as counsel for a large number of allottees, and which resulted in an order from the master to the official manager, for the latter to make out nine lists of the subscribers, giving a statement of their various cases, so that the whole might go for decision to the court. The master was afraid that this would be fearfully expensive, but as the parties in attendance insisted upon it, he felt he had no alternative. The official manager will have to go through 20,000 shares. Mr. Pocock, on behalf of various allottees, contended that as the deed of the company was founded in fraud, all contract as regarded the subscribers was vitiated, and that they were absolved from all legal liability to become contributories to pay off debts. The directors alone were liable. The master replied that the question of fraud was one in which he had no jurisdiction, but the parties could take it to the court. It was resolved to do this, and the proceedings were adjourned.

Wisbeach, Peterborough, Birmingham, and Midland.—On Monday the winding up of this company's affairs came on for hearing before the Master in Chancery, Dowdeswell, at his chambers, Southampton-buildings, Chancery-lane. The petition for winding up is from Mr. Samuel Pocock, of 27, Bloomsbury-square, and states that the proposed capital was 300,000*l.*, with a deposit of 2*l.* 2s. on the shares. Considerable cost was incurred in surveys, many shares were allotted, but very few persons paid the deposit. The company is now wholly insolvent, there being several debts outstanding and unsatisfied. Petitioner has been sued in the Court of Queen's Bench for a debt due by the company to the Commercial Bank of London, and been compelled to pay a considerable sum for the debts of the company, in respect of which two actions are now pending against him. The master appointed Mr. Goodchap, the accountant, and Mr. Toogood, solicitor, to investigate the affairs, and forthwith wind them up in conformity with the Act of Parliament.

Indian Railways.—It is understood that the Board of Trade refuses to confirm the nomination made by the East India Company of an *ex-officio* director of Indian railways, declaring such an appointment to be illegal without their sanction. The Board also objects to the appointment of any salaried officer at present employed in the India-house. The question at issue is referred to the legal advisers of the Crown and the honourable Company.

Audit of Accounts.—The directors of the North-Western Railway have issued for prompt answer the following queries to their shareholders respecting the proposed plan of audit, so as to supersede Government interference:—Do you approve or otherwise of the suggestions generally? If specially—1. That it be made compulsory on the auditors appointed by the proprietors to employ a known public accountant, &c.? 2, 3, 4, 5, and 6. That the audit of the accounts be continuous, &c.?—7. That the half-yearly financial statements of all companies shall be made out, as nearly as may be, in a form to be prescribed &c.?—8. That it shall be competent for a minority to appoint special auditors and accountants, &c., as suggested, &c.

The Shrewsbury and Chester and the Birkenhead Railway Companies.—Unhappily the differences which have arisen between these two companies present, as yet, no grounds for anticipating that they will be brought to a speedy and amicable settlement.

Dublin and Belfast Junction Railway.—We are informed that Mr. Dargan, the enterprising railway contractor, has taken the contract for the erection of the railway bridge over the Boyne. The span, one arch, is to be 200 feet wide and 90 feet above high-water mark.—*Dundalk Democrat.*

Serious Occurrence at Brittannia Bridge.—A mishap of a very serious kind occurred in connection with the operation of lowering the great hydraulic machine from the summit of the pier. The capstan gang, nine or ten in number, seized with a panic, suffered themselves to be overpowered; and the consequence was most serious injury to two of the men—one being dreadfully bruised about the head, the other having sustained compound fracture of the thigh. The tide being favourable, the poor fellows were taken in a boat to Carnarvon hospital. The press went to the bottom, and will have to be fished up again.—*North Wales Gazette.*

Extaordinary Despatch.—A coil of copper wire, 12,200 feet long, was delivered at the Gutta Percha Company's works, City-road, at 4 p.m. on Monday, the 19th, to be covered with sulphuretted gutta percha for the Prussian Government, with strict injunction that it must be despatched by the Hamburgh mail on the following day. Notwithstanding this short notice, the extraordinary feat was accomplished, the coil being shipped within 24 hours of its arrival.

ON THE LAW RELATING TO MINES.

[Extracted from a work, just published, by R. P. Collier, Esq., Recorder of Penzance.]

OF MINING PARTNERSHIPS.

When Persons working Mines are Trading Partners.—A landowner who works mines in his own ground, and sells the ore, is not a trader—at least, within the meaning of the Bankrupt laws; nor are two or more joint tenants, or tenants in common of land, who work mines, necessarily so, even if they work with a common fund. A question of some nicety sometimes arises whether persons working mines are trading partners, or mere joint occupiers of land, using the minerals as part of its produce. The result of the cases on this subject (some of which are somewhat conflicting) may be stated to be, that this question will turn on the consideration whether the land be obtained wholly or principally for the purpose of trading in the ore, or whether the selling of the ore be only incidental or appurtenant to the occupation of the land. Where, however, companies of adventurers have been formed for the purpose of mining, and obtained leases, either of the land or the minerals, or licenses to work in pursuance of that object, the courts of equity have long since recognised such associations as a species of trading partnerships.

Of the Distinction between Mining Partnerships and Ordinary Trading Partnerships.—Few mines, indeed, belong to one or a small number of proprietors—by far the greater part of them being worked by associations more numerous than ordinary trading partnerships; for the expense of effective mining operations is generally beyond the means of individuals, and the risk is such that few are willing to venture in them all or the greater part of their property. This, and other peculiar features of mining partnerships, have been recognised by our law—not the least virtue of which is its adaptability to the convenience of the trading classes. The dissolution of partnerships, so numerous by the death, bankruptcy, outlawry, or felony of any one partner, would have been incompatible with that continuous working of a mine which is necessary to success. It would have been highly inconvenient if no partner had been allowed to part with his share without the consent of each of his co-partners; moreover the spirit of speculation and adventure, without which concerns so hazardous as those of mining would seldom be commenced or persevered in; and the fluctuating nature of the property indicated the expediency of a ready transferability of shares. Again, it would have been somewhat hard upon the mining adventurer if each of his numerous associates, whom he had not the means of selecting, had power to bind him by engagements with the public as extensive as those of partners in ordinary trading concerns. Accordingly, mining partnerships were early recognised as differing from ordinary trading partnerships, in not being founded on the *delectus personæ*—from which principle the rights and obligations of ordinary trading partners are mainly derived. It was decided, after many doubts, that the mining partner had a right either to relinquish or transfer his share without the consent of his co-partners; and that upon his death, or bankruptcy, the law, instead of dissolving the partnership, would transfer it to his executors or assignees; and the powers of partners to bind each other by engagements entered into with non-partners were restricted.

Of the Peculiar Character of Cost-book Mining Companies.—The search for tin and copper, the principal and peculiar mining productions of Cornwall and Devonshire, has been, on the whole, more precarious than that for coal, and to some extent than that for iron; while capital has been scarcer in these counties than in the great trading and manufacturing districts, within range of which the principal coal and iron mines are situated. These, and perhaps other causes, have given rise to numerous small and experimental associations in these counties, commencing with little capital, though many shareholders, wanting the stability, consistence, and regular organisation of the more opulent companies of the north. These associations have found what is commonly called the "Cost-book" System of management the most convenient for their purposes, and many have retained it after success has introduced a different class of shareholders, and changed the character of the concern; while others have in time outgrown the simplicity of the cost-book type, and assumed the features of joint-stock companies. Companies known by the name of joint-stock companies have been long prevalent in this country—some of which have secured to themselves privileges by charters and Acts of Parliament; while others, assuming more or less the character of corporations, have either travened, or narrowly steered clear of, the rules of the common law, and the provisions of the Bubble Act, until the accumulation of such companies, together with the unsettled state of the law respecting them, gave rise to the comprehensive measure passed in 1845 for defining and regulating their powers. It was felt, however, that the cumbrous machinery forced upon those companies, which has proved sufficiently embarrassing to many of them, would have crushed in their birth the greater part of the puny associations in which the mines of Cornwall and Devonshire commonly originate; moreover, companies under the Cost-book System had never so far encroached upon the privileges of corporations as to profess to restrict the liability of members to the amount of their shares, so far as creditors were concerned—the assumption of which privilege by joint-stock companies, as an inducement for procuring shareholders, was their most odious feature to the courts of common law and of equity, and, in a great measure, led to the statute which regulates them. The transference, indeed, of shares at the will of the holder—another assumed privilege of joint-stock companies, always viewed with disfavour by the courts—had, though often questioned, been conceded to the peculiar nature of mining companies, partly on the ground of convenience—partly because of the mixed landed and commercial character of mining concerns—in which each partner has commonly a legal or equitable tenancy in common in lands or minerals, which the law allows him to transfer without the consent of his co-tenants. Cost-book companies, in short, had neither brought upon themselves, nor were strong enough to bear, the ponderous fetters imposed upon joint-stock companies, and were for these, or possibly other reasons, expressly exempted from the operation of the Act. Such mining companies (commonly called *scrip* companies) as have been registered under that Act, now fall within the general law relating to joint-stock companies—a discussion on which would be beyond the scope of this treatise, and for which the reader is referred to the treatises on joint-stock companies. Mines under the Cost-book System, however, occupy a somewhat anomalous position, more so since the passing of the Act referred to than before, between joint-stock companies on the one hand, and ordinary trading partnerships on the other. It is deemed of some importance to ascertain what that position is, and to refer to several recent cases which illustrate some questions arising out of it. Before going further, it is necessary to inquire, what is the Cost-book System? What mode of conducting a mine by a set of adventurers, about 25, will exempt them from the pains and penalties consequent on non-registration under the Joint-Stock Companies' Act? The origin and formation of a mining company under the Cost-book System, in its simplest form, may be thus described:—A number of adventurers, who have obtained permission from the owner of the land to work a lode, assemble; they decide on the number of shares into which their capital is to be divided, and the number to be allotted to each; they appoint an agent, commonly called a purser, for the purpose of managing the affairs of the mine; and enter in a book, called the cost-book, the minutes of their proceedings, which are signed by all present. A license to *try* for ores for 12 months, or some short period, is then obtained, followed, if the search be promising, by a sett—that is, a lease of the minerals, or a license to dig, or both, granted by the landowner to the purser, or to one or two of the adventurers, without any expression of trust on their part for the rest, or any other person's, for a term of years, commonly 21, stipulating for the annual payment of some portion of the ore raised. The purser superintends the works, orders the necessary materials, keeps the cost-book, in which he enters all the proceeds and disbursements of the mine, the names of the shareholders, together with the account for and against each, and the transfer of shares, whenever they are transferred; he makes calls such as have been agreed to at a general meeting, and convenes those meetings by circular at regular intervals, commonly of two months. These general meetings review the accounts and report of the purser, and pass resolutions, either declaring dividends or authorising calls, and directing the mode of carrying on the mine. It is understood that any adventurer may relinquish his share and with it his liabilities, at least as far as his partners are concerned, by giving notice of relinquishment in writing to the purser, and settling his account with the mine. Such, it is believed, are the leading features of the Cost-book System in its ordinary and simplest form. These features, however, are in many instances departed from, even in mines professing to be conducted under that system; while others are sometimes introduced, bearing so strong a resemblance to the joint-stock company type as to make it difficult to pronounce as to the character of the concern.

What Deviations from the Cost-book System would probably subject such Companies to the Penalties for Non-Registration under the Joint-Stock Companies' Act.—It is clear that a company cannot escape from the provisions relating to joint-stock companies, if they act as a joint-stock company, by merely calling themselves a company under the Cost-book System, or setting a cost-book, or entering into a deed of partnership, declaring that the mine shall be conducted on the Cost-book System. On the other hand, it cannot be supposed that every deviation from the model of that system which has been described can subject a set of adventurers to the pains and penalties of non-registration. It is very difficult to say what deviations will be followed by such consequences, or to draw the line of demarcation; but it is somewhat less difficult to indicate some of the prominent features of the Cost-book System—an acquaintance with which will make it easy to decide the character of the concern in many cases, and will be a guide in all. In the first place, the keeping of a *cost-book*, containing the matters above described, and to which every adventurer has access, is the most obvious, and, perhaps, important feature. There are other features, however, not indeed equally distinct and invariable, which distinguish the Cost-book System from ordinary trading partnerships on the one hand, and joint-stock companies on the other. The principal distinction from ordinary trading partnerships seems to be the absence of the *delectus personæ*. In ordinary trading partnerships, each partner chooses those with whom to embark and continue his fortunes. It is obviously inconsistent with the voluntary character of such associations that a partner should have the power of transferring his shares without the consent of his co-partner, or, should he be succeeded, on his death or bankruptcy, by his executors or assignees; the dissolution, therefore, of such partnerships is a necessary consequence of either of these events. Again, the liabilities of partners for the acts of each other in the course of carrying on the business, such as drawing bills of exchange, depend upon the same choice of associates, and the limitation of them in cost-book societies is founded on the absence of such choice. Should a cost-book company endeavour to introduce the principle of "*delectus personæ*," for example, by stipulating in a deed of settlement that shares shall not be transferred without the consent of the company, or in any way restricting the transfer of them, it would be a grave question whether they would not essentially depart from their system in the direction of ordinary trading partnerships, and like such partnerships come within the operation of the Act, if consisting of more than 25 members. The Cost-book System seems mainly distinguishable from that of joint-stock companies by the control directly exercised by the whole body of the shareholders over the management of the concern. They appoint a purser, who acts as the servant of all, whose functions are purely executive, who is removeable at pleasure, and accountable to frequent meetings of all the shareholders, at which meetings only the general affairs of the company are deliberated upon and regulated, dividends declared or calls made. In short, the constitution of the cost-book company may be characterised as republican, compared with that of the joint-stock company, which delegates its powers in a great measure to an aristocracy of directors. It cannot indeed be supposed that the delegation, subject to its periodical resumption of authority to more than one person, or even to a committee, would necessarily make a material alteration in the cost-book type—in extensive mines there are commonly one or more captains, who are in the habit of ordering materials as well as the purser, and in some cases the functions of purser are discharged by a committee. But should powers beyond those usually exercised by the purser—for example, the borrowing moneys, the drawing bills, or the making of calls, or auditing and passing accounts—be delegated to a board of directors, or a committee of management, or to a select body of shareholders by any other name, and the general meeting of shareholders be discontinued and held at rare intervals, it is apprehended that the character of the Cost-book System would be essentially departed from. Having endeavoured to define the nature of the Cost-book System with as much accuracy as the subject admits, it is proposed to consider the effect of the principal cases bearing upon the rights and liabilities of shareholders to the public, and among themselves. [*To be continued in next week's Mining Journal.*]

* *A Treatise on the Law relating to Mines*, by R. P. Collier, Esq., of the Inner Temple, Barrister-at-Law; Recorder of Penzance. London: William Benning and Co.

STANNARIES' COURT, CORNWALL.

Nov. 16.—Williams *v.* Wyld.—On the application of Mr. Roberts, the registrar's report for sale of shares was confirmed.

Harvey and Another, *v.* Freeman.—Mr. Roberts said this was a creditors' petition against Creegbraws Mine, the debt amounting to 1289*l.* 14*s.* 9*d.* Defendant as purser had answered the petition, and admitted all the allegations. The court had already issued a decree of payment, and the time allowed for payment would expire on the 31st of December. He now moved, on affidavits, for an injunction to restrain the removal of the materials of the mine. He then read the affidavit of Richard Harvey, one of the plaintiffs, and of Henry Lowry, who had been for some time deputy-purser and book-keeper, and an adventurer in the mine. The latter affidavit stated that at meetings of the adventurers it had been resolved to dispose of the mine and materials; that the balance of loss was ordered to be divided; that the mine was much indebted, costs were much in arrear, the engine had ceased to work for two or three months, and there had been disputes as to the working of the mine. The affidavit of Mark Bawden stated that he was requested by Capt. John Manley, of St. Michael Penkivel Mine, to assist him on the 7th inst., in removing certain materials from Creegbraws to St Michael Penkivel Mine; and Samuel Bawden's affidavit stated the removal of tackle by Samuel Moyle, on the 8th inst. The Vice-Warden said that in the present case there was not only a litigation in court, but a decree, and that would probably be found to vitiate any title—probably no title could be conveyed from vendor to vendee under such circumstances. Still he did not see why an injunction should not issue, by which the parties would be warned that they were not in a position to sell, and by which subsequent litigation with the vendees might be saved. On such affidavits as were now produced, he should certainly grant an injunction before a decree, and he did not see why he should not grant it since. He gave a long time for payment on account of the largeness of the sum, to enable the parties to collect in their debts, not to dispose of their materials; but probably they did not know the law.—Mr. Hockin suggested that the affidavits were not sufficient, as they did not show the removal of materials to have been the act of the adventurers in this mine, but of the agent of another mine.—The Vice-Warden said the removal was supplementary to the resolutions to sell, and it was for him to judge whether there was suspicion that the removal was in consequence of that resolution.—Injunction granted.

Baynard and Others *v.* Tremain.—Mr. Stokes again applied for a rule *nisi* in this case, to show cause why the matter should not be referred to the registrar to compute principal and interest. The question was whether he could revive an interlocutory judgment. He then read an affidavit by himself (which had been extended since he first applied for the rule at the suggestion of the court). The affidavit stated that the action was brought against defendant on a bill of exchange for 74*l.* 15*s.* 10*d.* payable on demand, and jointly and severally made by defendant and John Varcoe. Interlocutory judgment had been signed in October, 1847; but further proceedings had been delayed at the urgent request of the defendant, who had promised, from time to time, to pay the amount of the bill, and had called at Mr. Stokes's office on the 31st ultimo to request further time, promising to make a payment on account in the course of a few weeks.—The Vice-Warden: Did he within a year after August, 1847, (when the bill was drawn) not only promise payment, but request delay?—Mr. Stokes said his memory could not enable him to say.—The Vice-Warden said that under these special circumstances he should allow the interlocutory judgment not to be revived, but to be proceeded on to final judgment. He did not at all enter into the question as to whether the statute applied to an interlocutory as well as a final judgment, because he considered the statute to be entirely applicable to the superior courts. But this court was entirely one of common law, and he thought that according to the universal maxims of common law, if a defendant were repeatedly and urgently to request a plaintiff not to proceed to execution, but to give him time, and he would pay, and by that means, were to prevail on a plaintiff who had obtained a judgment, to put off execution for a year, if there never had been any statute passed, any court would have said there would have been a fraud upon the law, if a defendant, under such circumstances, were to prevail so as to send the plaintiff to a second suit. He therefore granted the rule *nisi* to compute, directing that the rule should refer to the repeated and urgent request of the defendant for delay, in order that there might be no precedent established when there were not the special circumstances of this case.—The Court was then adjourned.

Nov. 19.—Bickford and Others *v.* Richards.—This was a creditors' petition, and Mr. Roberts moved to confirm the registrar's report, there being no exceptions. A dividend of 20*s.* in 1*l.* had been paid, and a balance remained of 97*l.* 16*s.* 10*d.*—Mr. Stokes, as solicitor for defendant, applied for payment of the balance to defendant as purser and an adventurer in the mine in question (Trenow Consols), when it was in working. In answer to the Vice-Warden, he said there was no claim besides those already liquidated; that most of the adventurers resided out of the county, but there were some in the county, and he mentioned Mr. Roscorla and Mr. Richards himself, as being responsible men.—The Vice-Warden said a purser might be a very competent person to be sued, but he might not necessarily be a competent person to receive a remaining balance after the mine had stopped working. However, he did not see that the motion should be refused. He should order that the money be paid to Mr. Richards within three weeks, and in the meantime, without imputing anything to defendant, *ex majori cautelâ*, some of the principal adventurers should be informed of it; for a defendant might in such a case get money into his hands, and then set up a right to retain it, when there was no right.

Hodge *v.* Kirkman.—In this case the Vice-Warden said there was a question arising on a petition by Dr. Cullen, whose case was heard on exceptions taken to the registrar's report; the case being a creditors' petition, the registrar had decided that the party excepting was a co-adventurer in the mine, as well as a creditor thereof, and that, consequently, while the proof of his debt was received, his dividend, if any, would be postponed till payment in full of the other creditors by the co-adventurers. The court inclined to the view taken by the registrar, but the evidence being scanty, and the excepting party having undertaken to procure more clear evidence to the registrar, the cause was referred back to him; but no further evidence was produced, and the registrar adhered to his original opinion; whereupon exceptions were argued before the court, and though he (the Vice-Warden) should have wished for more decisive evidence, his opinion, on the evidence before him, agreed with that of the registrar, and his report was confirmed. At that time he did not say anything about costs, because costs generally follow the event, especially when a party objects to a competent tribunal. He supposed that the decree would have been drawn up in the usual manner, and such probably would have been the case if the excepting party lived, or had been found within the jurisdiction of the Stannaries. But it being otherwise, the costs of the parties who supported the registrar's report successfully, must be paid by them, unless they, under the special circumstances, can be equitably charged to the fund. He thought they might be so charged under those special circumstances; and he thus qualified his opinion, because in the event of a similar case arising, the party supporting the registrar's report, might by applying to the court, enable the court to avoid the special circumstances to be found in the case now before it. The supporting parties are mining creditors. Their success had removed a claim from the fund, and had been the cause of every creditor, who is not an adventurer, receiving a larger payment than would have been received had the excepting party been successful. The supporting parties, therefore, have fought in the cause of all, and increased the fund. If those parties were now required to pay the costs, they would virtually receive a less dividend from the fund than the other creditors who have stood by and peaceably observed the proof of the excepting party. Thus the activity of the one set of creditors in preserving the fund would be a prejudice to them, while the supineness of the other set would be a cause of gain to them. In order to avoid this, now, on this the first occasion of a foreigner excepting to a report, he should allow the costs of his opponents to be imposed on the fund, which term should be added to the decree; but he wished also to have some recital in the decree, that it was in consequence of the special circumstances to which he had alluded.—*West Briton.*

The Compendium of British Mining.

BY J. Y. WATSON, ESQ., F.G.S.

Bedford United Tin and Copper Mines.—(For general statistics, see *Mining Journal* of 7th April, 1849.) In 4000 shares; price 4*l.* each; paying dividends of 5*s.* per share quarterly, or 1*l.* per share per annum—being at the rate of 25 per cent.; the dividends paid this year, amount to 15*s.* per share. The mines are of large extent, though the present operations are limited to one part, where a large body of rich ore has been discovered Situated in Tavistock, near the Devon Great Consols Mines. Since this was written a meeting of shareholders has been held; and from the state of the mine and finances, the dividends in future will be 5*s.* per share every two months, or 1*l.* 10*s.* per annum.

West Caradon Copper Mine.—(For general statistics, see *Mining Journal*, Jan. 13, 1849.) In 256 shares, price 100*l.*, paying dividends bimonthly, at the rate of 15*l.* per share per annum, or 15 per cent. The dividends already paid this year amount to 12*l.* 10*s.* per share. The ore from this mine is rich, and, considering the returns, the dividends ought to be greater.

Stray Park, Camborne Vean, and Wheal Francis Copper Mines.—(For general statistics see *Mining Journal* of Dec 2, 1848). In 1000 shares, price 22*l.* per share. Dividends paid this year 1*l.* per share, or rather less than 5 per cent. The mines are rich, and, with a good price for copper, will, in all probability, pay 20 per cent. for the future.

[*To be continued in next week's Mining Journal.*]

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—In handing you a report of these mines during the past week, I beg to say that the lode in Field's engine-shaft, sinking under the 60 fm. level, is quite as large and good as it ever has been; and the lode in the 60 fm. level east is, since the last report, improved very considerably, and is now worth quite 40*l.* per fm. The engine-shaft will not be sunk deeper for the next fortnight, as the shaftmen are engaged fixing plunger and drawing lift.

BARRISTOWN.—The new lode cut in the 18 fm. level (western cross cut), is about 18 in. wide, with a good branch of lead, producing from 10 to 15 cwts. per fm.; the back of this level is producing about 8 cwts. of lead per fm. The lode in the 24 fm. level end, west of engine-shaft, is a little improved, but still producing an available quantity of lead. The stopes west of slide, in the bottom of the adit level, are producing one-half ton of lead per fm. Our prospects westward are decidedly improving, and if the new lode should continue its present course and underlay, it will be the best thing we have had, as it is going down in bearing ground, which is different from the lode worked on in the old mine—its underlay at present is a little south.

BEDFORD UNITED.—The ground in the present end in the 103 fm. level, east of Bailey's winze, is a little eased, and the lode has, consequently, assumed a more favourable appearance—being at present 3 ft. wide, and yielding from 2 to 3 tons of ore per fathom, with every probability of an increase. In this level west, on the south lode, we are driving by the side of the lode. In consequence of the water becoming too powerful in the winze in the 80 fm. level, we have been unable to communicate it with the rise in the 90 fm. level, as anticipated in my last; but expect to do so daily. We continue to drive by the side of the lode in the 70 fm. level east.

BRYN-ARIAN.—The lode in the 10 fm. level, west from the engine-shaft, is about 4 ft. wide, with several small branches of lead ore throughout; we have not commenced driving this level east since the rise in the back was communicated to the winze sunk down from the level above, as the old adventurers left a large part of the lode standing, and we are now cutting it down to the 10 fm. level; this is 3 ft. wide, and will yield 12 cwts. of ore per fm.; as soon as this is completed, we shall again resume the driving of this level. The lode in the stope in the bottom of the deep adit level, east from the shaft, is 6 ft. wide, yielding 15 cwts. of ore per fm. The stope east of the winze, in the bottom of this level, is yielding 15 cwts. of ore per fm.; the stope in the back of this level, east from the shaft, is yielding 15 cwts. of ore per fm.; the stope in the back of the same level, west from the shaft, is yielding 8 cwts. of ore per fm. We are not deeper down on the great south lode than when last reported, as the timber left by the old men is so very rotten, that we are obliged to secure everything before we go down another foot. The workings are very large; and every part of the lode we find standing will, there is little doubt, produce good ore.

CALLINGTON.—At the north mine, in the 125 fathom level cross-cut, the ground continues much the same for driving as last reported on. In the 112 fm. level north, the lode in the rise is rather small, and poor; in the 112 fm. level south the lode will produce 3 cwts. of silver-lead ore per fm. In the 90 fm. level south the lode will produce 4 cwts. of silver-lead ore per fm., leaving a back that will work at a moderate tribute. The diagonal shaft, sinking below the 80 fm. level, is now down 5 fms. below the latter level. The 70 fm. level east, on Kelly Bray lode, will produce 1 ton of copper ore per fm. At the north mine, the 125 fm. level south will produce 4 cwts. of silver-lead ore per fm. The 112 fm. level south is opening ground that will work at a moderate tribute; in the 112 north the lode is at present disordered by a small cross-course. Our tribute pitches, on the whole, are looking rather better than for some months past. Our last parcel of silver-lead ore, computed 43 tons, sold to the Tamar Smelting Company, realised 17*l.* 3*s.* 6*d.* per ton.

CAMBORNE CONSOLS.—I am commissioned by Mr. Daniell, who was obliged to leave home to-day, to report to you our prospects underground, which, I am happy to say, are most satisfactory. The silver lode in the 20 fm. level is looking very well in the back; we to-day broke some capillary silver, together with very rich silver ore; the appearances in the end are of a flattering nature—the branch they have been driving upon continuing to produce fine silver ore, and the indications altogether being good, they having to-day cut another branch from 2 to 3 in. wide, which I consider to be grey sulphuret of silver. The counter in the adit end has never been more promising than at present; it is about 18 in. wide, composed principally of copper pyrites and quartz, with a small quantity of arsenical pyrites; and the water having increased considerably, there seems no doubt of their having a capital bunch of ore at its junction with Tyndall's lode; the ore is of first-rate quality, but they have not opened upon it sufficiently to hazard an opinion as to its value per fathom. They have to-day begun to drive upon the silver lode in the 40 fm. level; it is about 2 in. wide; but I believe Mr. Daniell has already told you that they are not to expect any silver until they have driven 10 or 12 fms. west of the cross-course.

CWM ERFIN.—The stope in the back of the 20 fm. level, 10 fms. east of the engine-shaft, is worth 5*l.* per fm. The stope from the 20 to 30 fm. levels, east of the engine-shaft, is worth 10*l.* per fm. The stope from the 30 to 40 fm. level, east of engine-shaft, is worth 10*l.* per fm. The sink under the 20 fm. level is worth 10*l.* per fm. The 20 fm. level, east of the whim shaft, is poor. The 20 fm. level, east of Robert's winze, is worth 10*l.* per fm. The 20 fm. level, west of Robert's winze, is worth 10*l.* per fm. The stope in the back is worth 10*l.* per fm. We have instructed Mr. Evans to sample 20 tons of ore on Tuesday next; tenders to be addressed to the committee ten days after the date of sampling.

DEVON AND COURTENAY.—The lode in the end, driving west in the 40 fm. level, is 2 ft. wide, composed of white iron, mixed with spar, and spots of ore. The lode in the end, driving east of the 50 fm. level, on the gossan lode, is 2 ft. wide, composed chiefly of caper and spar, producing also in places in the lode good stones and branches of ore—saving work. The shaftmen are progressing with their bargains as fast as possible. The pitches are looking well.

EAST CROWNDALE.—The middle shaft is now down 11 fms. 4 ft. 7 in., a corresponding depth with the engine-shaft. We are this day dropping the pump, and shall be ready to drive east and west on Saturday next. I am happy to inform you that the lode in both ends of the shaft produces good work, worth at least 8*l.* per fm.—the driving at present can be effected for 4*l.* per fm. I propose putting six men in each end to push on the drivage, in order to lay open ground for tribute or otherwise, which, with a continuance of our prospects will, ere long, bring the mine into the dividend-paying ranks.

ESGAIR LLEE.—The north lode in the deep adit, east of the cross-cut, is much the same as last reported. The south lode in the deep adit, east of the engine-shaft, is still poor. The lode in the winze under the 12 fm. level at present is not looking so well, as a few fms. above the lode seems to be disordered. The caunter lode in the shallow adit, west of Morgan's winze, is getting more into gossan, with some good stones of ore. The same lode, in the shallow adit east, is much the same as last reported, and I expect we shall hole or come at these two levels by the end of another week. We have a fresh party of sumpmen, who have so far proved themselves much superior to their predecessors, therefore the sinking of the shaft is going on well.

HOLMBUSH.—The lode in the 120 fm. level south is 6 ft. wide, composed of quartz and stones of lead; the ground in the 120 fm level cross-cut, driving south to intersect the flap-jack lode, is still very favourable. The lode in the 110 fm. level south is 3½ feet wide, composed of quartz; stones of lead are found occasionally scattered throughout the lode, but there is no regular branch of it. The flap-jack lode, in the 100 fm. level, east of the great cross-course, is 3½ ft. wide, and will produce about 4 tons of copper ore per fathom; there is a small horse of killas in the middle of the lode, which (for the present) has rather impoverished it, and which is the case at times with all lodes, more or less, but we hope it will soon improve.

KIRKCUDBRIGHTSHIRE.—The lode in the 62 west is 5 ft. wide, yielding 15 cwts. of lead per fm.; the east end is still unproductive ground. The lode in the 50 end west has opened very large, with a fine spar spotted with lead, but more scattered and not so rich as last week. We have a fine large lode coming in the winze, which we are sinking under the 50, and over the 62 west of Stewart's, with good stones of ore through it—this is like the same large lode we have in the bottom end.

LAMHEROOE.—In the engine-shaft, for the last three weeks, we have not averaged driving more than 2 ft. per week, owing to a hard bar of ground, which I find to be 7 ft. in thickness, and have now reached the extent of it; had we not met with this said bar, we should now have been in receipt of the lode—I expect it will take us nearly a fortnight before we cut it. At Davey's shaft, in the 50 fm. level, the men will reach the extent of their take, 3 fms., by Saturday next—ground more favourable for driving than when taken. The appearances of the K lode in the 30 fm. level, and the Benny lode in the adit, confirm the opinion which I have invariably held, that it is very promising, and if fairly explored, bids fair to realise very profitable returns. I can readily believe you are very anxious to receive some favourable reports from this mine, but you may rely upon it my anxiety on the subject is as great, if not more so, than your own. The shafts being down, to prove the mine will be to intersect the lodes—to do this we must extend our cross-cuts north and south with all possible speed.——A report from Mr. Cleverton says—"I have not seen Capt. Tabb's last report, but certainly it cannot have reference to any results from our operations; and I apprehend we cannot expect any decided results until the lode is opened east of the cross-course, nor speak of our prospects with any certainty until all our lodes have been well opened. It strikes me, therefore, our shareholders are unnecessarily discouraged by the quiet tone of Capt. Tabb's report, who, I believe, is exceedingly cautious, and unwilling to be placed in the category of puffing agents, whose unfounded and exaggerated statements generally terminate in nothing. For myself, I can only say I would not be a party to induce our shareholders to expend their money a single day after it has been proved on trial of the lodes that they are not likely to reap any benefit from further outlay. I hope, however, for better things."

LEWIS.—The engine-shaft is sunk to the 80 fathom level, where the lode is 2½ ft. wide, producing some tin, but not to value. We intend driving west under sumpwhim shaft, in order to communicate with the same, which we expect to do this month. The lode in the 70 east is 3 feet wide, worth 7*l.* per fm.; the 70, east from ladder-road winze is now holed in the 70, west from sump-shaft, on south branch, where we have several fathoms of good tribute ground well ventilated; the 70, east from sump-shaft, on south branch, is producing some good quality work—driving at 11s. tribute. The 60, east from sump-shaft, on south branch, is worth 10*l.* per fm.; the lode in the 60, east on Cock's branch, is 1 foot wide, saving work; in the 60, south from sump-whim shaft, the ground is harder than usual. The lode in the 50 east, on south branch, is small, producing a small portion of tin; the 50, east from copper ore shaft, on Cock's branch, is worth 5*l.* 10s. per fm.; the south lode in the 50, east from Oak shaft, is 1 foot wide, producing some good stones of tin, and very promising. The lode in the 40, east from copper ore shaft, on Cock's branch, is worth 5*l.* per fm.; the lode in the 40, west from copper ore shaft, on Cock's branch, is worth 5*l.* per fm. The tribute ground in general, since last report, is improved.

MENDIP HILLS.—I have no particular change to report to you in the appearance of your property, the beds of stuff which we are opening through in Charterhouse Valley being about 15 ft. thick, producing some tolerable good slags and slimes. At Ubley we have the dressing-floors in full operation; the produce of slags from this place is pretty good. At present we have a large pile prepared, and I hope shortly to see an improvement in the stuff, which we undoubtedly shall as we get nearer the bottom of the valley.

SOUTH WALES MINES.—The Bodcall south lode, in the shallow adit west, is looking much the same as last reported. At Dalwin, the lode in the deep adit, east of the Rhydnet river, is now 10 ft. wide, and is getting much stronger than before, being composed principally of friable quartz, flookan, mundic, lead and copper ore, but not so much of the latter as when last reported, and is now looking more promising for lead than copper. In consequence of the deficiency of air, we have been for the present obliged to suspend the sinking of the winze under the deep adit, and are now raising over it to the surface for air, &c., which will be from 8 to 10 fms.

SOUTH WHEAL TRELAWNY.—The ground is very much improved in the engine-shaft sinking below the 40 fm. level, being a dark blue killas stratum, which, in the locality, is congenial for mineral, as it proved in the adjoining mines, and we hope by-and-bye to find it so here. The quantity of water we have is just as usual, and the machinery in good order.

TAMAR SILVER LEAD.—The engine-shaft is sunk 10 fathoms below the 190 fm. level; there has been no lode taken down in this shaft since last reported on. In the 190 end, driving south, the lode is 18 in. wide, composed of spar, capel, and ore, producing work of a moderate quality. In the 175 end the lode is 2½ ft. wide, interspersed with ore. The 160 end is suspended for the present, on account of so much work coming from the tributers. In the 145 end the lode is 4 ft. wide, 6 in. of which is good work. In the 135 end the lode is 1 foot wide, yielding work of a promising character. In the winze sinking in the bottom of the 160 fm. level the lode is 6 in. wide, passing through ground that will set at a high tribute. At North Tamar, in the 90 fm. level, we have cut a trip plat, and the shaftmen are at present engaged fixing pentlouse, and cutting ground preparatory to sinking. In driving north, in the 80 fm. level, the lode is 1 ft. wide, composed of can and small strings of silver-lead ores. In the 70 fm. level north the lode is 3 ft. wide, yielding work of a moderate quality; in the winze sinking in the bottom of this level the lode is 3½ ft. wide, 1 ft. of which is work of a promising description. Our last parcel, or October ores, weighing 87 tons 9 cwts. 3 qrs., was sold to the Tamar Smelting Company, at 20*l.* 9s. 6d. per ton.

TINCROFT.—On Highburrow tin lode, in the 152 fm. level, east of the engine-shaft, the lode is 5 ft. wide, worth 17*l.* per fm. In the 142 fm. level, east of Martin's east shaft, the lode is 3 ft. wide, worth 12*l.* per fm.; the stopes east of the shaft are worth 17*l.* per fm. In the 132 fm. level, east of Martin's east shaft, the lode is 4 ft. wide, worth 18*l.* per fm.; the stopes east of the shaft are worth 16*l.* per fm. In the 120 fm. level, west of the engine-shaft, the lode is 4 ft. wide, worth 12*l.* per fm. At North Tincroft, in the engine-shaft, sinking below the 100 fm. level, the lode is 4 ft. wide, worth 12*l.* per fm. for copper; in the 100 fm. level east the lode is 3 ft. wide, worth 9*l.* per fm. for copper; in the west end, in the same level, the lode is 3½ ft. wide, worth 10*l.* per fm. for copper. In the 90 fm. level, east of Willoughby's shaft, the lode is worth 8*l.* per fm. for copper; in the 90 fm. level, west of the engine-shaft, the lode is worth 20*l.* per fm. for copper. In the winze sinking west of the engine-shaft, below the 80 fm. level, the lode is 3 ft. wide, worth 15*l.* per fm. for copper. In the 110 fm. level, driving east from Cook's Kitchen, the lode is 3 ft. wide, worth 6*l.* per fm. for tin; in the 100 fm. level, east of downright shaft, the lode is 3½ ft. wide, worth 7*l.* per fm. for tin and copper; the west end in the same level is worth 14*l.* per fm. for copper. In the 80 fm. level west the lode is 4 ft. wide, worth 9*l.* per fm. for copper; in the winze sinking below this level the lode is 3 ft. wide, worth 4*l.* per fm. for tin. In the 70 west the lode is 4 ft. wide, with spots of ore. In Palmer's shaft, sinking below the 90 fm. level, on East Pool lode, the lode is 4 ft. wide, with some ore; in the 90 fm. level west we have put the men to rise; the lode is 3 ft. wide, worth 5*l.* per fm. for copper. In the 80 fm. level west the lode is 2 ft. wide, worth 6*l.* per fm. for copper; in the bottom of this level we are sinking a winze; the lode is 4 ft. wide, worth 4*l.* per fm. for copper. The 70 west is worth 5*l.* per fm. for copper. In the 36 fm. level, west of Stainsby's shaft, the lode is 2 ft. wide, with spots of ore. In the 24 fm. level west the lode is 1 ft. wide, with good stones of copper ore; in the winze sinking below this level the lode is worth 25*l.* per fm. for copper. At Wheal Providence, in the engine-shaft sinking under the 33 fm. level, the lode is 2 ft. wide, composed of prian, spar, and spots of ore.

TRELEIGH CONSOLS.—The 125 cross-cut, at Garden's, is driving towards the lode. In the 90, west of ditto, the men are still rising against the winze in the bottom of the 80. In the 80, west of cross-cut, the men are rising against the winze in the bottom of the 70; the lode in the rise is 2 ft. wide, worth 18*l.* per fm.; in the 80, east of cross-cut, the lode is 3 ft. wide, with stones of ore; in the 80, west of Garden's, on the south part, lode 10 in. wide, poor; in the winze below the 80, the men are driving west on the north part to meet the 80 east of cross-cut: the lode in the end is 2½ ft. wide, with stones of ore. In the winze below the 70, the lode is 20 in. wide, worth 3*l.* per fm. In the 60, west of Garden's, lode 18 in. wide, with stones of ore. At Wheal Parent, the 40 cross-cut, north of the engine-shaft, is driving towards Parent lode. The 40 cross-cut, south of ditto, is driving towards the middle lode. In the 30, east of ditto, lode 2½ ft. wide, worth 4*l.* per fm., improving; in the 30, west of ditto, lode 2 ft. wide, with good stones of ore. In the 20, west of ditto, lode 1 ft. wide, poor. At the middle lode, in the adit, east of Nicholson's, lode 1 ft. wide, worth 2*l.* per fm.

WEST WHEAL JEWEL.—The 85 fathom level, west of Williams's cross-course, on Wheal Jewel lode, is looking more promising for ore then it was when last taken down. In the past week we have taken down the lode in the 70 fm. level, west of ditto cross-course, on same lode, and we are happy to state that the lode is worth 16*l.* per fm. The 47 fm. level, east of ditto cross-course, on same lode, is worth 4*l.* per fm. The deep adit west, on same lode, is unproductive. The deep adit, west of Tregoning's shaft, on Tolcarne tin lode, is producing stones of tin. The 12 fm. level, west of ditto shaft, on same lode, is not taken down in the past week; the stopes in the back of the same level, west of Pryor's winze, on Tolcarne tin lode, are worth 12*l.* per fm.; the stopes east of Pryor's winze, on same lode, are worth 10*l.* per fm.; the stopes in the bottom of the same level, east of Tregoning's shaft, on same lode, are worth 30*l.* per fm.; the stopes west of ditto winze, in the bottom of the same level, are worth 20*l.* per fm.—these stopes are working on tribute.

WHEAL BENNY.—In the adit level we have sunk a winze 10 fms. 1 foot, and have passed through the cross-course. The men are now driving north; we have set 3 fms. or the month, at 4*l.* per fathom; they have driven about 6 ft., and shall have about 3½ fms. to open before we cut the lode; when cut, in extending eastward, it will give us from 60 to 70 fms. of backs. At Ford's shaft, in the 30 fm. level, we have driven by the side of the lode 2 fms., and shall have about 3 fms. more to drive to get under that part which holds out such promising appearance on surface—set 3 fms. or the month, at 5*l.* 10s. per fm., and to pay all costs.

WHEAL SARAH.—The water is in fork to the 20 fm. level, and the tributers' lead brought to surface, which is very good work. We have a pare of men rising in the back of the 9 fm. level, and breaking very rich work for lead and silver. We are also stoping the back of the 20 fm. level, which is turning out very good work; we shall set more men breaking lead as soon as we can get them. We shall be ready to begin to fork the water in the 30 fm. level by the end of this week, where we hope to meet with good lead ground. Our steam-engine is working well, but there is not enough water to keep it constantly going. We expect to sample this month 5 tons of lead, which will bring 20*l.* 2s. 6d. per ton.

WHEAL TRELAWNY.—In the 82 end, north of Phillips's shaft, the lode is 4 ft. wide, worth 8*l.* per fm.; in the south end, in this level, the lode is 4 ft. wide, worth 9*l.* per fm. In the 72 end north the lode is 5 ft. wide, worth 8*l.* per fm.; in the south end, in this level, the lode is 2½ ft. wide, worth 9*l.* per fm. In the 62 end north the lode is 3½ ft. wide, worth 10*l.* per fm.; the south winze in the bottom of this level is holed to the 72; in the north winze the lode is 2 ft. wide, worth 10*l.* per fm. At Trelawny shaft the men are employed cutting plat, and dividing and casing down the shaft to the 82. In the 72 end, north of this shaft, the lode is 4 ft. wide, worth 16*l.* per fm.; in the south end, in this level, the lode is 3 ft. wide, worth 9*l.* per fm. In the 52 end north the lode is 3 ft. wide, worth 8*l.* per fm. At the North Mine there is no alteration in the 55 end, north of Trehane, since last report. The 40 end, north of Smith's shaft, is suspended for the present, and the men put to rise against the winze sinking under the level above, and as soon as it is holed there will be sufficient air to resume the driving. The lode in the end looks favourable. The stopes are much the same as last reported.

WHEAL VINCENT.—Our mine in general is looking just as last reported. The tinstuff we are now stamping from the stopes, in the bottom of No. 3 shaft, is turning out exceedingly well, much better than the first taking down of the lode. We have finished the wheel for the grinder, and hope to get the pivots, axle, &c., in their places next week. Our horse engine works well; and the lode in the bottom of the shaft is producing some good work for tin. This, and other matters, I shall be better able to report on more fully next week.

FOREIGN MINES.

THE AUSTRALIAN MINING COMPANY.—The following is the Tungkillo Mine report for the month of July:—

PRODUCE OF TUNGKILLO. *Tons.*

Total 21 cwts. of copper ore sent from the mine to the port, supposed to yield 26 per cent. of copper	403
Now lying in and on the mine, ditto	167
Total raised, 26 per cent.	570
Computed 21 cwts. raised from commencement, supposed to yield 10 to 12 per cent., not lying on the ore floors, available for smelting in the colony	530
Total	Tons 1100

REPORT.—The 40, east from Masterman's shaft, is now driven 10½ fathoms, and we expect that 30 fms. remain to cut the lode. Goad's stopes continue to yield ores of superior quality; we were hindered from raising the usual quantity in the last month by holing the 40 fm. level. We hope this place will turn out well in August. In the 40 north, on side lode, near Masterman's shaft, the lode yields ores of excellent quality; the bearing of the lode in this end has been so much cast as to make it appear it would run into Baker's lode. It has now, however, made a turn off westward, as though it would continue to run parallel with Baker's lode. We have, however, suspended the 30, west from Stephen's (in which we have but no lode as yet) until this doubt be solved. The 40 north, in Harvey's cross-cut, in past month, has turned out some silver-grey copper ore, in combination with copper pyrites; at present, however, it is not so good, being unusually hard, and combining a large quantity of poor ore; it, however, maintains here, as in all other places, its usual character, promising to be rich and lasting at the deeper levels. In the new winze, under the 40, in side lode, between Richards's and Harvey's cross-cuts, the lode has recently been comparatively unproductive; now, however, a gradual change has taken place for the better, and we are expecting again to see this a large and rich lode of copper down towards the 50 fm. level. In the 30 fm. level a cross-cut has been driven west from Rawling's winze, where we have cut into the side lode 12 feet; it is composed chiefly of gossan of a fine description—that particular kind of gossan which, in all my mining experience, I have never known to fail in leading to large deposits of copper ore.

From this cross-cut we have now commenced to drive northward, the gossan being soft, at 8*l.* per fathom, so that we shall soon prove if this lode runs parallel with Baker's lode or not; this end is turning out fine stones of green carbonate, combined with tough black sulphuret of copper. From the last-named cross-cut from Rawling's winze, we have also commenced a winze on the side lode, and in which we are already down 2 fms.; it has turned out 5 tons of ore above 20 per cent.; and the ground continues favourable for sinking, and yielding rich ores of black sulphuret and green carbonate. When this winze is holed in the 40, we shall have two good stopes, and the advantage of the railway in the 40 to extract the ore. Masterman's shaft is now nearly 8 fms. below the 40, and I am much pleased to find so little water in it—the drainage being effectually performed by one horse, driven no more than three miles an hour; the lode is composed of hard quartz, mundic, and copper pyrites; the mundic is in abundance, of that friable kind generally found to exist in very productive lodes; it contains copper to pay for stamping, washing, and smelting in the colony; the size of the lode we know not; we are carrying down the shaft 5 ft. wide, all lode. When the shaft reaches the 50, we shall drive north on Baker's lode under the stopes, and west into the side lode; and in each of which places I am in expectation of a course of ore in the 50. In the 40 south on the side lode, near Masterman's shaft, the lode in this end is not at present very productive, turning out occasional stones of green carbonate. I cannot say the mine is looking so well to-day at the different extremities as on the last survey day and the previous one, as the setting list and valuation show; yet we have more ore in sight in the mine now than we ever had before, because the ore is standing entire in back and bottom on the side lode, and which cannot be advantageously stoped away until a winze, or winzes, may be sunk through it from the 30 to 40. No doubt remains now that the side lode is the principal one, and it is probable the two will meet at or below the 50; and such a junction would be likely to be very advantageous to the mine.

IMPERIAL BRAZILIAN MINES.—Gold Report:—

Gongo—From 22d to 31st August	*Lbs.*	2	9	2	0			
1st to 10th September		1	2	17	0			
11th to 22d September		3	2	15	0	7	2	14 0
Bananal—From 22d to 31st August		0	10	6	6			
1st to 12th September		0	2	12	0			
13th to 22d September		0	10	13	0	1	11	11 0
Total	*Lbs.*	9	2	5				

LINARES MINES.—Letter from Mr. H. Thomas, dated Linares, Nov. 7:—

Since my last letter I have examined, with Capt. Curry, a portion of the workings in our eastern pertinencias. The first shaft, E. from the engine we found sunk to the first level, but all communication at present closed by waste, or deads. Here, both above and below the level, there have been large workings, and enormous quantities of lead have evidently been removed. Both here and in other parts of the mine there have been left branches of lead, 3 to 5 inches wide, which, in England, we should value at from 1 to 1½ ton per fm.; but these are mostly in tight ground, the softer and larger parts of the lode, or rather lodes, being all removed. In this part of the mine the character of the lode is the most favourable possible. The second shaft, 20 fms. further east, is also down to the level, but the lode could not be seen here on account of the rubbish. One of these shafts must be sunk without much delay, and we shall probably be able to cut one down, so as to have the sinking below the first level on the course of the lode, and get it down, perhaps, through old workings rapidly to the 2d level. In examining another old shaft, considerably to the east, we discovered a very great depth of old workings, on a very large and promising lode, which we shall again examine, as well as other shafts further east. The result of our examination gives us the strongest possible assurance of the great value of this property, which we trust to be instrumental in developing. In forking the mine, we are now down between 10 and 11 fms., and as the back of the next level is about 12 or 12½ fms. from the 1st or 17 fm. level, we shall soon see it. In examining some workings west of the Calavera winze, about 8 fms. below the level, we have discovered a small arch of lead, which, as it probably affords a fair sample of the produce of the mine, we shall send you specimens of. The workings about this are also considerable, and, independently of this small arch, there is some ground standing, from which we expect by-and-bye to raise several tons of lead.

Nov. 11.—Since my last, we have examined more of the workings in the eastern pertinencias, where there are two large lodes, 16 fms. apart, both much worked on, and having been evidently very productive. The probability is, that all these workings, from one end of the mine to the other, judging from the continued old operations visible at the surface, have been followed down as far as they could well be proceeded with for the water; and that we may hereafter, when able to turn our attention to a distance from the engine-shaft, expect to find good courses of lead gone down. The deepest workings are, no doubt, about the engine-shaft, where alone does there appear to have been any malacate, or whim, for drawing water erected. In clearing up the Calavera winze, we have found some loose lead of good quality, amounting probably to 2 tons in all, which will diminish the expenses of this necessary labour; and we are assured that other winzes in the mine will also do something towards paying for being cleared by the lead to be found in them. I hope to forward the box of ore, &c., to-morrow or Tuesday. We are expecting daily to see the back of the second level, or rather levels—two parallel being indicated on the plan, and also reported to us.

NATIONAL BRAZILIAN MINES.—*Cocaes, Sept.* 2.

You were informed, on the 22d August, that there had been two pares of borers employed in sinking below the adit level upon the layer on which Hamilton's stope is made, and that the lode was by no means unpromising. Since that date there has been two more pares of borers placed at that point, and we have now much pleasure in stating that, within the last few days, the vein in it has again opened, and on Thursday last there was a beautiful sample of gold obtained from it, not inferior to those taken a little more than two months ago, when the layer was first met with in the eastern end. Yesterday there were other samples of a most promising character brought out of the mine from the same line of ground, and we are daily expecting large returns of gold from that point. Cocaes produce from 24th August to 3d September, mcs. 8 3 0 6.

The directors have received by the packet a remittance of mcs. 69 3 1 39, or about 560 ozs. of gold.

ST. JOHN DEL REY MINES.—*Morro Velho, August* 28.

Gold extracted to date, 14,473 oits., from 845·28 cubic feet of sand (resulting from 20 days' stamping) = 17·12 oits. per cubic foot. The stamping work for 27 days averaged 94 heads. The supply of stone is gradually improving, and during the last seven or eight days we have been enabled to supply the stamps without recurrence to the refuse heap. This favourable change is owing to the increase of our number of borers, arising partly from the striking diminution in our sick list, and partly to the circumstance of the increase in the number of our native borers, which has averaged 49 1-6th during the week, from the 21st to the 27th inclusive, while, in the corresponding period of the preceding month, they averaged only 34 5-10ths.

Sept. 8.—Produce for August, 23·047 oits. = 221·41 lbs. Troy, being according to the reduction returns from 5468 tons of ore, yielding 4·21 oits. per ton. Stamps working during the month, 94·4 heads. The supply of stone has perceptibly improved, as the following returns of the quantities sent up from the mine during the last six months will show:—In March, sent up 5679 oits.; April, 4980; May, 5571; June, 5518; July, 6476; August, 5974. During the first 20 days of August 340 loads were brought in from the refuse heap; but since the 20th, not only have we done without any assistance from thence, but in the last five days of the month we were enabled to throw out 90 tons.

Cost in August, Rs. 41,432 406, at 25d.	£4339	15 10
Produce, 23,047 oits.; less duties, 7 per cent., 1613—net oits. 21,434, at 7s. 7½d.	8160	11 0
Profit	£3821	15 2

17*th.*—Mr. Morgan starts early to-morrow morning for Rio in charge of eight boxes amalgamated gold, for shipment from thence, as usual, to your address—viz.: seven boxes containing each 5389 oits., 37,723 oits.; one ditto, 5394—making together, 43,117 oits. = 414·23 lbs. troy. Gold extracted to date, 7785 oits., from 422·61 cubic feet of sand (result of ten days' stamping) = 18·42 oits. per cubic foot; this promises well for a good month's produce. Stamps working, 17 days, average 94·37 heads. The supply of stone from the mine is maintained with considerable spirit, and although, since the 10th, we have not been enabled to reject any, still we have not hitherto during this month been compelled to derive assistance from the refuse heap.

28*th.*—Gold extracted to date, 15,364 oits., from 842 5-16ths cubic feet of sand (result of 20 days' stamping) = 18·23 oits. per cubic foot. Stamps working, 27 days, average 94·18 heads. The supply of stone is ample for our requirements, and within the last three or four days we have again recommenced to throw out, though in very small quantities, the inferior stone. This improvement is owing to the gradual increase in our boring force, arising partly from the more healthy state of our blacks, and partly from the daily increasing number of our native borers. I am, in consequence, more than ever satisfied with the resolution I adopted to provide additional dwellings for the accommodation of these men. Six of the new houses, or rather huts, are already finished and inhabited; six more will, I trust, be finished in a couple of days, and next week I shall set about the erection of a dozen more. All this I am well aware must tend for a short time to enhance the cost; but the increased labour thereby rendered available in your mines will speedily repay the expense tenfold. Already our borers are increased to 237 and 240, and Capt. Treloar, in consequence, contemplates the immediate resumption of operations, either in the Gambia, or the Old Champion ground.

West Quebra Panella.—I am sorry to say we continue completely at fault about this lode; the ground we have been driving through towards the north-west is so dreadfully hard that the progress is exceedingly slow; and as certain indications cause Captain Treloar now to suspect that the lode has been heaved to the south, it is his intention, once through the hard rock, which has been so long baffling him, to drive to the south, in the hope of cutting the lode in that direction.

HOLNE PARK MINING COMPANY—DELFOSSE *v.* HOLLIS.

SIR,—As it is material to me, as far as I am personally concerned, and to the public, as far as the Holne Park Mining Company is concerned, that this matter should obtain publicity through the medium of your Journal, I beg to refer you to the *Law Times* of the 10th inst., wherein you will see that a rule for a new trial was obtained on this cause, which was tried at the summer assizes, held at Croydon in August last, and reported at the time in your Journal. As the defendant was one of the acting committeemen of the Holne Park Mining Company, and endeavoured to evade his liability in this action, as well as other liabilities in connection with this company, I beg to inform the creditors of the company that I will give them every assistance for the recovery of their respective claims, upon their communicating with me.

White Lion-court, Birchin-lane, Nov. 22. DAVID LLOYD, Jun.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

[I send you the following, being the result of my personal observations, as I promised to do so on the first opportunity of my visiting. You may rely on the correctness, according to the best of my judgment. I have also heard of improvements in other mines, but I have not visited them; I will, however, give you further information, when I can do so with propriety.]

DEVON AND COURTENAY.—This mine is progressing favourably, and promises to be shortly among our profitable mines. One pitch, let at 4s. 3d. in 1*l.*, is likely to turn out well, and I expect they will rise upwards of 20 tons of good ore from this pitch alone. The rest of the pitches, and also the ends, are looking very well.

WHEAL FORTESCUE will shortly tell what has been wanted. There is now a good branch of ore discovered in the 40 cross-cut, and they are within a short distance of the lode, which I think will be found (from the present appearance of the lode) in the western part of Maria, and this branch, now cut, I am inclined to think will lead to something profitable.

BIRCH TORR AND VITIFER.—These mines promise to become very soon a most profitable undertaking.

WHEAL RUSSELL.—I was underground there yesterday, and I must say, that I was very much delighted to find such a fine tin lode, and the more surprised as so little has been said about it. The lode is in the 14 fm. level, which I should consider to be worth about 40*l.* per fm.; and I have every reason to believe this mine will shortly become a profitable undertaking.

LIDFORD TIN (better known as Wheal Mary Emma).—I am glad to state that the lode in the shaft continues very good indeed; it is about 3 feet wide, composed of capels, elvan, spar, and the richest and the most solid work for tin I ever saw. I am having the tin raised in the shaft, and put under lock, to prevent it from being stolen.

SOUTH WHEAL JOSIAH.—I find the lode in the adit end much improved in appearance in the last 2 fathoms driving, and is now about 3 feet wide, composed of a leader of mundic and white prian on the south wall, about 16 in. wide; the other parts of the lode are spar, flookan, mundic, and grey ore, mixed together, and I think will shortly improve, as we approach towards the great cross course, where we may expect a quantity of copper. In the pitch in the bottom of the adit the lode is improving, and the tributers are bringing out some fine work; the lode is about 3 feet wide, and I think will turn out to be the top of a fine bunch of ore. They have began to dress the ore, and it is turning out well.

WHEAL MAY.—Mr. C. S. Richardson has lately visited this mine, and reports that the lode is going down nearly vertical, alternating its underlay; the lode has been sunk on only 3 ft. under the bed of the brook, or 12 ft. from surface; it is 1 ft. 9 in. big, and composed of strings of grey copper ore, containing 150 ozs. of silver and upwards to the ton of ore. In driving an adit level to intersect the lode, which is about 5 fms. from the point of intersection, a parallel gossan lode, underlaying north, has been taken, which will form a junction with the main lode in depth. The lode on which a shaft is being sunk on the underlay is stated to be worth from 80*l.* to 120*l.* per fathom. Since the discovery made, shares have been in demand at an advanced price. Assays have been made of specimens from the mine, yielding 650 to 700 ozs. to the ton of metal.

WHEAL RUSSELL.—Another correspondent writes on the 21st—I have been underground here to-day, and am glad to say that I have seen a capital course of tin, worth 50*l.* per fm.; but, at present, the end is not looking quite so well, but still an excellent lode. Nothing new in any other part of the mine.

[From the *Plymouth Journal.*]

BIRCH TOR AND VITIFER MINES.—*Vitifer Lode:* We have cleared and secured the 8 fm level east of the old engine-shaft, about 6 fms., and the adit level west of it about 14 fms In the 10 fm. level, east of Dunstan's shaft, we have met with a branch about 6 in. wide which we at first took to be the main lode—here we are driving on the cross-cut north to intersect the main lode. In the 20 fm. level east, we have a large tinny lode, but not rich in this end—it is not yet clear of the influence of the cross-course. In the 10 fm. level, west of this shaft, we have a good paying lode. I am proud to see this end looking so well, being now between 20 and 30 fms. west of the shaft. In the 20 fm. level west, the lode is much improved, and will pay for driving, at 5*l.* per fm. We are within a few feet of entering the fine run of tin ground which we are driving on in the 10 fm. level. We have cleared and secured the 8 fm. level east of the engine-shaft about 6 fms., and have here met with some arches left by the ancients, which show that the lode was very good, and as this is about 75 fms. to the west of Dunstan's shaft, there is now no doubt that we shall have a very profitable lode for the whole of this distance, and the adit appears to have been extended and the backs beaten away some hundreds of fathoms to the west of this. We have shipped 5½ tons of tin this sampling; this fully meets our cost, and the next sampling, should the weather be favourable, will be very much larger, with no considerable increase of expenditure, and we must commence the new year with good profits. On Birch Tor lode there is no alteration. The north lode continues favourable for driving.

EAST CROWNDALE MINE.—On Rixhill lode, the middle shaft, which is being sunk on the course of the lode, will be down to the 28 fm. level by the end of this week, and by the end of the month the pitwork will be fixed, and the whim kibble brought to the bottom, when we shall immediately commence driving east and west. The lode in the shaft has improved in sinking for the last 4 fms., and is at present producing excellent work; should this continue (which I have no reason to doubt), our levels will at once lay open profitable ground. Our tribute ground in the back of the 17 fm. level looks well, and the tributers are likely to do well this month.

TAVISTOCK CONSOLS.—The lode in the shaft maintains its size, and is still composed of mundic, spar, and peach, but not so much of the former (mundic) as there has been, and more of the latter (peach). I have sent a sample to be assayed, and as the peach appears to carry the tin in it, this change is very encouraging.

WHEAL FRANCO.—There is no alteration in this mine since my last.

PLYMOUTH WHEAL YEOLAND.—The lode in the east and west end produces tin, and has a very kindly appearance, and the mine, on the whole, looks well for the depth. The next sampling will be about 3 tons.

ACCIDENTS.

Death by Fire-damp.—An explosion of fire-damp occurred in a coal pit at Clay Cross, causing the death of Henry Alsop, a man about 30 years of age. Deceased was at work at the far side of a pit which was well ventilated, and exhibited no appearance of fire-damp; but after a fall of coal an explosion took place, which burnt both Alsop and a companion who was with him. Alsop, it seems, was making his way to the bottom of the pit, when he appears to have mistaken his path, for he came in contact with the foul air, and was stifled by the after-damp.—*Derby and Chesterfield Reporter.*

Shipley, Derbyshire.—As Enoch Moor was pulling two waggons laden with coal, his feet slipped from under him, and one of the waggons coming upon the poor lad, crushed him so much as to cause his death.

Swansea.—As John Hopkin, a miner in the employ of the Ystalyfera Iron Company, was about to fire a shot of powder on Thursday last, in order to loosen the topping of one of the patches, the wind blew a spark from the fire he carried in his hand to the priming, which exploded against him before he could have time to retreat, by which the poor fellow's leg was broken, and other severe injuries inflicted.

Bridgend.—John Phillips, while engaged in his usual occupation at Brynau Colliery, on Monday, had both his legs broken, and sustained other serious and ultimately fatal injuries by trams which run over him, in consequence of the snapping of a chain.

Bilston.—As Samuel Harper, and 11 other persons, were upon the bank of a coal-pit in Mr. Phillip Williams's field, for the purpose of descending the pit to work, the banksman pushed the waggon over the mouth of the pit; the engineer lowered the skip upon it, and the men and boys got in it, when the waggon, by some means, slipped back about half a yard, and the deceased and the others jumped off; but Harper slipped down, fell into the pit, and was killed.

West Bromwich.—At the inquest on the sufferers by the boiler explosion, at the South Staffordshire Iron Foundry (noticed in last Journal), Messrs. James Hiley, boiler maker, George Williams, forge manager, and George Burgess, engineer, were examined as to the state of the boiler; and it appeared that, besides a leak which had been noticed for some time past, many of the plates were much worn, and it was often out of repair. Notwithstanding this, however, all these witnesses considered the boiler and engine were in good working condition, at the time of explosion, and quite sufficient for the work it had to

do. They were of opinion that the explosion did not result from the water being too low, but from an extraordinary pressure being exerted, which could not be accounted for. Burgess had only had charge of the engine for six or eight weeks, but he was represented as a steady experienced man, and he stated that his son had been engaged as his assistant three or four years There appeared to be no ground for attributing neglect to any one, and the jury returned a verdict of "accidental death."—*Wolverhampton Chronicle.*

Brisdenni Colliery.—An explosion of fire-damp occurred on Wednesday last, at the Brisdenni Colliery, in the parish of Cadoxton, in the occupation of J. T. Price, Esq., by which two men were burnt, but, we are informed, not very severely.

Woodside Colliery, Dudley.—As four men were engaged on the bank, a large quantity of coal (stated to be about 30 tons) fell from the workings, without the slightest warning, and killed them on the spot.

Walsall.—As J. Smalley was pushing a skip on to the waggon, over the pit's mouth, at Messrs. Highway's pit, he fell, and was killed.

BOLANOS MINING COMPANY.

A meeting of shareholders was held at the London Tavern, on Wednesday, the 21st inst., Sir ROBERT PRICE in the chair.

Mr. HEAD (the secretary) having read the circular calling the meeting, proceeded to read the report of the directors, the tenor of which was, that in the report of June last, when a full financial statement was laid before the proprietors, the directors had informed the company that the liabilities of the mine then were $78,264, in order to meet which, and to further prosecute the workings of the mine, they had proposed to raise a capital of 42,000*l.*, at 3*l.* per share; the reason this sum had been fixed upon arose from the cause that the number of shares supposed to be in existence was computed at 14,000. The directors, although they had never anticipated the raising of the 42,000*l.*, still hoped that they might obtain 25,000*l.* With this sum the mine would have been put in a working course; they had thought, probably, 15,000*l.* would be sufficient, but only about 3000*l.* had been subscribed. On a subsequent occasion, the directors had given a pledge that, unless a sufficient amount was furnished, they would not go on with the working of the mines. They had lately received advices from Mexico, which had informed them of the commercial difficulties there; the mines had been stopped, all but the necessary works for drainage. The results of the last general meeting to obtain capital had been most unsuccessful; 13,162 shares had only been subscribed, at 1*l.* each. On the 26th October, at a meeting held between the directors and the subscribers, it was unanimously agreed that the deposits should be withdrawn. The consequence of this was, that the directors had no other resource than to restore the mine of El Bote to the owners, on the best possible terms; these were, that they should take the mines as they stood, excepting the steam-engine and other machinery; that they should acknowledge the company's liabilities of $87,033; they should provide for bills to the amount of 3000*l.* coming due; satisfy the *alimentos* incurred; and undertake all contracts entered into by the company. This agreement was to date from August last. The El Bote being surrendered, there only remained the Celestina Mine, which, as the receipts exceeded the cost, would be abandoned.

The present value of stock at El Bote, according to balance sheet, was ..	$ 32,559	3	7
Deduct debts to sundry persons	13,071	1	3
	19,488	2	4
Inventories of stock, including haciendas of La Granga and La Benzoo ..	29,534	1	2
Total	$49,022	3	6

To attempt to realise any of this property by a forced sale would be excessively impolitic. Next June they should again report to the shareholders; at present, they thought it was unwise to dissolve the company. They were resolved to await the working of the El Bote, whether by a new company, or by private individuals.—After the report was read, Sir ROBERT PRICE moved that it be printed, and a copy sent to each proprietor.

Mr. PHILLIPS said, that he was sorry to observe the Bolanos Company had given up the El Bote Mine. Some ten years since the Real del Monte Company, in whose service he was, had sent him to inspect their mines; they had likewise kindly given him permission to inspect the other mining districts of Mexico; he had been both over-ground and under-ground, and knew the country well. The El Bote Mine had every prospect of being a good mine. He was glad, however, to learn some steps were about being taken to form a new company.

A SHARKHOLDER observed, that as he thought, from the report, that the El Bote was entirely to be abandoned, he was glad to find, from what had fallen from Mr. Phillips, that there was a probability of its being resuscitated.

The CHAIRMAN stated that, although there was every probability that the El Bote would be worked again, and that a species of preference would be given to those who were interested in the Bolanos Company, the speculation would have nothing to do with the present Bolanos Company.

After a little desultory conversation, a vote of thanks to the chairman was unanimously carried, and the meeting separated.

TREVISKEY AND BARRIER MINING COMPANY.

The usual bi-monthly meeting was held on Monday, the 19th inst., for Aug. and Sept., when the following statements of accounts were presented, and a dividend of 5*l.* 10s. per share was declared:—

TREVISKEY.

By amount of ore sold, 26th July (less lord's dues) ..	£2036	17	3	
Barrier adventurers for materials	3	16	1	—2040 13 4
To labour cost, August and September	718	12	7	
Tribute of ore	175	5	0	
Merchants' bills, &c.	347	0	10	
Treavean adventurers, engine cost, &c.	175	13	4	—1416 11 9
Profit				£ 624 1 7
By balance in hand end July				86 13 1
Total				£ 710 14 8
Deduct dividend of 5*l.* 10s. per share				660 0 0
Leaves balance in hand				£ 50 14 8

BARRIER.

To labour cost, Aug. and Sept., and tribute of ore ..	£ 20	4	3	
Treviskey adventurers materials, &c.	3	16	1	
Treavean adventurers engine cost	1	1	8	
Sundry small payments	1	4	6	—£26 6 6
By amount of ore sold 26th July (less lord's dues)				3 16 2
Loss				£22 10 4
Due to pursers end July				90 4 10
Leaving balance due to the pursers				£112 15 2

The following agents' report was read to the meeting:—

Treviskey, Nov. 19.—Michael's shaft being now sunk to the 272, we propose commencing next week to drive the 272 fm. level east and west on the lode, which is here 3 ft. big, but unproductive. The lode in the 260 continues poor. The lode in the 248 is 18 in. big, and turning out 3 tons of ore per fm., of good quality. Here, since our last report, we have gone through a bunch of ore, varying in size from 2 to 7 ft. big, for 4 fms. in length, which has turned out from 5 to 15 tons of ore per fm. The lode in Brown's flat-rod winze, sinking below the 248, 35 fms. east of the shaft, is 3 ft. big, producing 8 tons of ore per fm.; this winze is 9 ft. long. The lode in the 236 is 2 ft. big, and yielding 2 tons of ore per fm. The men in the 224 fm. level are now sinking a winze, a short distance behind the end; the lode here is 1 ft. big, producing stones of ore, and has a promising appearance. The lode in the stopes in the bottom of the 236 will turn out 5 tons of ore per fm. We hope to put the new flat rods to work about the end of next month. We have not yet discovered any lode by driving south in the 40 fm. level, at Williams's old sump shaft. The improvement in the 248 enabled us to sample 421 tons of ore of good quality on Wednesday last, instead of only 350 tons, as stated in our report of the 17th Sept. last.

WHEAL FORTESCUE MINING COMPANY.

A general meeting of shareholders was held at the mining offices, Tavistock, on Tuesday, the 20th inst.—JOHN BAYLY, Esq., in the chair.

The accounts were presented and passed, showing balance of 9*l.* 3s. 4d. in favor of adventurers, and a call of 1*l.* per share made. The arrears of calls on 42 shares, amounting to 136*l.* 16s. 8d., became the subject of conversation, and it was unanimously resolved that the whole of the shares should be forfeited. The mine is now in a most encouraging position, and it is not fair or honourable for those who have neglected to pay their just proportion when the prospects were clouded, to share in the season of prosperity.

The following report from the captain was then read to the meeting:—

Since the last meeting, the engine-shaft has been completed to the 40 fathom level, at which depth a cross-cut has been driven north 8 fms. 1 ft. 6 in. towards the lode. Within the last 3 ft. of the end a branch has been intersected, varying from 10 to 15 in. in width, composed of quartz, soft prian, mundic, and copper ore, containing a sufficient quantity of the latter as to be tribute ground when laid open by driving. Judging from the distance that a similar branch, only of smaller dimensions, was intersected in the 20 fm. level cross-cut over, there remains about 10 ft. to drive in the cross-cut (40) to intersect the lode. From the very favourable reports given of this lode, in the levels driving from Wheal Maria towards Wheal Fortescue sett, we fully anticipate that the lode will be found a rich and productive one when cut into; we have also commenced driving a cross-cut south in the 40 fm. level to intersect the south lode, which we have every reason to calculate on being also productive when it is intersected.

BEDFORD UNITED MINING COMPANY.—A general meeting of shareholders was held at the office of the company, Threadneedle-street, on Thursday, the 22d inst., when the statement of accounts was presented, showing cash balance of 2106*l.* 3s. 2d. in hand; the liabilities, including the cost of October and November, with dues and dividends not yet paid, 1356*l.* 9s. 2d.; the assets being, including the estimated value of ores raised in October and November, 4978*l.* 11s. 8d. A dividend of 5s. per share was declared, being the third dividend of 5s. per share since last December.

EAST BULLER.—At the two-monthly meeting of shareholders, held on Friday, the 16th inst., the following statement of accounts was presented, showing—Balance in hand August 1, 365*l.* 7s. 4d.; ditto Sept. 30, 192*l.* 5s. 3d. = 557*l.* 12s. 7d.—Labour cost for August and Sept., 155*l.* 12s. 7d.; merchants' bills, 64*l.* 10s.; steam-engine and pitwork, 337*l.* 10s.=557*l.* 12s. 7d. A call of 10s. per share was made.

EAST TAMAR.—The usual bi-monthly meeting was held at the office of the company, on Thursday, the 22d inst., at which the financial statements were presented, showing the liabilities at 1442*l.* 0s. 4d., and the assets 2964*l.* 8s. 2d.

SOUTH TAMAR.—The two-monthly meeting was held after the above, and the statement of accounts represented the liabilities at 1018*l.* 15s. 11d., and assets at 3120*l.* 16s. 1d. Mr. Wolferstan (the manager of the mines) attended the meetings, and represented the prospects of each mine in the most encouraging and gratifying position.

NORTH BRITISH AUSTRALASIAN COMPANY.—The annual general meeting of this company took place at Aberdeen, on Friday, the 16th inst. The report of the directors was read, and, after considerable discussion, adopted. In future, no letters or documents from the colony are to be shown to the shareholders, without the sanction of a meeting of the committee of management. The amount realised from sales of ore and wool, during the past year, was nearly 7000*l.* The calcining furnace was in operation, and calcining 7 tons of ore per day; and on the 31st of May last, 180 tons were calcined. A vote of thanks to the chairman having been passed, the meeting separated.

THE LANCASHIRE COLLIERS.

The following is the copy of a notice issued by the colliers in St. Helen's district to their employers, dated 19th November:—

TO THE PROPRIETORS OF —— COLLIERY.

We, the coal miners in your employ, most respectfully beg leave to call your attention to a few observations which, in our opinion, deserve to claim your immediate consideration.

In Holy Writ we are told, that "He who does not provide for his family and household is worse than an infidel," and yet we, with thousands of our fellow-workmen, are at the present, and have been for some time past, unwillingly placed in this unenviable position, through the inadequate rate of wages paid us for the labour we perform.

Can this be in consequence of our calling; and the material raised by our labour having become of less utility and importance for manufacturing purposes and domestic comforts, that has been the cause of ourselves and families being brought to the verge of ruin? No; we venture to assert that that hydra-headed monster, "Competition," which has been carried on to such an unjust and unnatural extent on the part of employers, and we, as workmen, in too many instances, having followed in the ruinous train, by endeavouring to make up in part, through lengthened hours and additional toil, the deficiency in our wages, thereby raising more of the commodity than the demands of the community required, which have been the causes of the present depreciated prices in coals, and, consequently, low wages. And it now behoves both masters and servants to lay aside any spirit of antagonism which may exist between those whose interests should be identical; for we, whose only capital is our labour, having been pressed on by hunger's sharp thorn, have come to the *determination* to claim a portion of our undoubted right—that is, a nearer approximation than we at present receive to a "fair day's wage for a fair day's work." And in *fourteen days* after the above date we shall expect to be paid in accordance with the following list:—

In taking this step, we feel assured within ourselves we are not acting presumptiously. The Word of God sanctions it; state of *trade* warrants us in doing so: public opinion supports the same; and our own suffering privations and domestic wants prompt us to it. Therefore, we trust our request will receive the attention it merits, which, if reasonably, calmly, and justly considered, we have no fear of the result.

Yours, most respectfully, THE MINERS IN YOUR EMPLOY.

DERWENT IRON-WORKS.—The stoppage of these works, consequent on the strike of the pitmen at the Consett and Crookhall Collieries, which was reported in last week's Journal, has obliged Messrs. Cargill and Mounsey to blow out four-fifths of their furnaces; not only are the workmen of the collieries out of employment, but between 1600 and 1800 men who were employed on the iron-works. Combinations on the part of masters or men are dangerous to every trade; and, in the present state of the law, any forcible attempt to put them down would be considered tyranny. A plan which probably would obviate them has been pursued with good success in France. Connected with each trade, in several of the manufacturing towns, there is what is technically term a *cour des prudhommes*, composed of an equal number of workmen and masters. These fix the nature of the work, limit of wages, and decide disputes.

COAL-PIT ON FIRE.—We have received a communication from Messrs. W. H. Brancker and Co., of Orrell Colliery, near Wigan, in reference to a paragraph in our last (copied from a Lancashire contemporary) stating that "the extensive coal and Cannel pits, called Worthyhouse Colliery," belonging to them, had been for some days on fire, which, it seems, was not the fact. As we may have been involuntarily the means of creating an erroneous impression, calculated to be injurious to the parties, we think it only a matter of justice to say we have been assured that Messrs. Brancker and Co. have opened out their new colliery on the most approved principles, and spared no expense in obtaining the most perfect ventilation, by means of steam jets, as well as a furnace; and that there is no colliery in Great Britain in which the ventilation is more perfect, or in which a better system is adopted for the safety of the colliers. It appears that on Wednesday week, a fire did take place in Walthew (not Worthy) House Colliery, but instead of burning for several days, as stated, it was extinguished in two or three hours. The accident happened, we are informed, through the carelessness of a collier who was driving the "main leading end" into the solid Cannel, and who, contrary to the rules of the establishment, was working with his Davy lamp too near the face of the coal. He struck his pick through the gauze of the safety lamp, which caused a small "blower" of gas to ignite, and thus set a small quantity of Cannel on fire, but the fire was extinguished without difficulty, and without any further accident whatever—a convincing proof of the superiority of the system of ventilation adopted, and the excellent management of the works.—*Liverpool Mercury.*

BRITON-FERRY IRON-WORKS.—We understand that these works produce iron of very superior quality of late. Great efforts have been made there during the last week, and everything appears to be in a flourishing state. We regret, however, to hear that, in consequence of some discontent prevailing among the workmen, several of the puddlers have given notice to leave.—*Cambrian.*

WARNING TO DIRECTORS.—The following important decision was given by Lords Brougham and Campbell, in the House of Lords, in the matter of the Forth Marine Insurance Company:—"Dividends are supposed to be paid out of profits only, and when directors order a dividend to be paid where no such profits have been made, without expressly saying so, a gross fraud is practised; and the directors are not only civilly liable to those whom they have deceived and injured, but are guilty of a conspiracy, for which they are liable to be prosecuted and punished."

THE HALL OF COMMERCE.—Yesterday, the Hall of Commerce, Threadneedle-street, was put up for sale at the Auction Mart, by Mr. Norton, when there was a large attendance of capitalists and others. The first offer was 20,000*l.*, When the biddings reached 35,000*l.*, the auctioneer said that was about the sum given for the site, which contained about 2000 feet. The property, after an active competition, was eventually knocked down for 44,900*l.*, which was stated to be below the reserved sum.

DIED,—At Plymouth, on the 15th inst., where he had gone to obtain medical advice, Captain James Clymo, aged 49 years. He was the chief manager, and a large adventurer, in South Caradon Mine, and was much respected by the miners, and all who knew him. He was also one of the borough magistrates of Liskeard, Cornwall.

COAL IN IRELAND.—We learn, by the *Derry Standard*, that "pretty confident hopes are entertained by the large coal consumers that at no distant period an extensive supply of that article will be obtained from the Ballycastle Collieries, the spirited proprietors of which are now busily engaged at the works, and are doing vast good in that quarter, by the ample and remunerating employment they give to labourers. It has been stated that, when all the arrangements are completed, they will be able to raise about 1000 tons of coal per week, and to sell the article at such low prices, compared with the rates of English and Scotch coal, as will prove highly advantageous to the poorer classes especially. One thing is much to be regretted in connection with this subject. While Lord Antrim, the owner of the lands in which the mines are situated, has given all the assistance in his power to further the object in view, the lessee who holds the lands under his Lordship is not acting in the spirit of one who would encourage the development of Ireland's mineral resources. On the contrary, it would seem that he has thrown several obstacles in the way of those enterprising gentlemen who, at such vast outlay, have opened the mines, and are building a harbour for shipping the coal to Belfast and other local ports in this country."

THE POST-OFFICE LONDON DIRECTORY FOR 1850.—This useful and, to a commercial man, necessary publication, has again made its annual appearance, with still greater accuracy and *eclat*, if possible, than its more immediate predecessors. In fact, from the first appearance of the *Post-office Directory*, some fifty years since, until the present period, it has gone on yearly improving, and its career has realised the old Latin adage, *vires acquirit eundo*. The present volume contains over 2000 pages, and consists of 12 different directories. These are comprised under the heads of official, street, commercial, trades, law, court, parliamentary, postal, city, conveyance, banking, and assurance directories. These are so ably arranged, condensed, and classified, that, by a trifling research, the stranger, and those seeking information, are enabled, with comparatively little trouble, to obtain the knowledge they require, which is not only most ample and accurate, but arranged so clearly that a reference can be made to any portion with the greatest facility. In fact, as a general directory, it is immeasureably superior to those pseudo-cheap and ephemeral publications which, under various phases, and different denominations, have struggled into existence by plagiarism from this work, and which, by the preface, we see are now totally defunct. The price at which the book is published, places it within the reach of that class (the trading community) for whom it is especially designed, while to the courtier and parliamentary man it has the recommendation of affording him the most useful and accurate summary to be obtained of the "modern Babylon."

ON VIEWING THE MOON.—"A circle of one second in diameter as seen fro, the earth on the surface of the moon, contains about a square mile. Telescopes therefore, must yet be greatly improved before we can expect to see signs of inhabitants as manifested by edifices or by changes on the surface of the soil."

LATEST CURRENT PRICES OF METALS.

LONDON, NOVEMBER 23, 1849.

ENGLISH IRON. *a*		*per ton.*	
Bar, bolt, & square, London	£5	15	0—6
Nail rods	6	7	6—7
Hoops	7	15	0
Sheets (singles)	8	10	0
Bars, at Cardiff & Newport	5	0	0
Refined metal, Wales*	3	10	—3 15
Do. anthracite*	3	15	0
Pigs in Wales	3	5	—4 0
Do. do. forge	2	15	—3 0
Do., No. 1, Clyde ... *net cash*	2	3	6—2 4
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport*	3	15	0
Do., do., for tin-plates, boiler plates, &c., ditto	4	10	0
Stirling's Patent } in Glasgow	2	18	—2 15
Toughened Pigs } in Wales	3	5	—4 0
Staffordshire bars, at the works	6	10	
Pigs, in Staffordshire	2	10	—2 15
Rails	5	0	0
Chairs	4	0	0
FOREIGN IRON. *b*			
Swedish	11	0	—11 10
CCND		—	
PsI		—	
Gourieff		—	
Archangel		—	
FOREIGN STEEL. *c*			
Swedish keg	14	10	—14 15
Ditto faggot	15	0	—16 0
ENGLISH COPPER. *d*			
Sheets, sheathing, & bolts, *p. lb.*	0	0	9½
Tough cake *per ton*	64	0	0

Tile	£83	0	0
Old copper *e* *per lb.*			8½*d*
Yellow Metal Sheathing			8*d*
FOREIGN COPPER. *f*			
South American, in bond		—	
ENGLISH LEAD. *g*			
Pig *per ton*	15	15	—16
Sheet	16	15	0
Red lead	17	10	0
White ditto	22	0	0
Patent shot	19	15	0
FOREIGN LEAD. *h*			
Spanish, in bond	14	10	—15 5
American ditto		—	
ENGLISH TIN. *i*			
Block *per cwt.*	3	13	0
Bar	3	14	0
Refined	3	16	0
FOREIGN TIN *k*			
Banca, in bond	3	12	0
Straits	3	6	—3 7
Peruvian (6 mo 2½ p. ct. dis.)	3	6	6
TIN-PLATES. *l*			
IC Coke *per box*	1	6	6—1 7
IC Charcoal	1	10	—1 12
IX ditto	1	16	9
SPELTER. *m*			
Plates, warehoused *per ton*	15	5	—15 15
Ditto, to arrive		—	
ZINC. *n*			
English sheet *per ton*	20	10	—21
QUICKSILVER *o* *per lb.*			3*s.*

Terms.—*a*, 6 months, or 2½ per cent. dis.; *b*, ditto; *c*, ditto; *d*, 6 months, or 3 per ct. dis; *e*, 6 months, or 2½ per cent. dis. *f*, ditto; *g*, ditto; *h*, ditto; *i*, ditto; *k*, net cash; *l*, 6 months, or 3 p. ct. dis.; *m*, net cash; *n*, 3 months, or 1½ p. c. dis.; *o*, ditto, 1½ dis.

* Cold-blast, free on board in Wales.

REMARKS.—There has been a large business done in Welsh bar-iron, and the price must now be written firm, at 5*l.*—free on board in Wales. Some of the makers are declining orders, unless at 5*l.* 5s. Staffordshire manufactured iron is more in demand, and considerable contracts have been made at higher prices. In Scotch pig-iron we can report little or no business; orders from consumers and for shipment being very scarce. There is a pause in the speculative tendency of this market, caused partly by the want of legitimate demand, and partly by the doubts which have arisen as to the validity of "makers' scrip." In other metals, no alteration.

GLASGOW, Nov. 22.—In pig-iron there has been a good deal of activity this week. The low price of the article has attracted speculators, and a considerable demand has therefore sprung up, both for immediate delivery and delivery in the spring. The article is firmly held, and makers are refusing to sell at current rates, anticipating still higher prices. We quote the price of mixed Nos. at 44s. 6d. and 45s.—cash.

LIVERPOOL, Nov. 23.—A very considerable business has been done this week in Welsh iron, and the price of bars is now firm at 5*l.* per ton in Wales. There have been more inquiries in Staffordshire iron, with a slight improvement in prices; the demand is, to a great extent, speculative, in anticipation of an active spring trade. The recent accounts from America are very discouraging—common bars offering at 83*l.*, and No. 1 Gartsherrie pigs at 82*l.*, but which would leave a loss upon the present rates here. The accounts from India are also dull for metals, and the home trade is inactive at this season of the year. A large speculative business has also taken place in Scotch pigs, by which the price has been advanced to 44s. to 44s. 6d., cash, at Glasgow. This demand, however, is freely met by the makers, and in the face of a stock of 200,000 tons, which is increasing weekly at the rate of 4000 tons, dealers and consumers hold aloof, anticipating an early and considerable reaction. Tin plates are more in demand, without any change in price. A moderate business is doing in lead and copper.

MANCHESTER, Nov. 20.—A decided change has taken place in our market for Scotch pig-iron since our last report, and we have to note an advance of fully 1s. to 1s. 6d. per ton on our quotations of last week. This state of things has been, in our opinion, principally brought about by speculative purchases, induced by the knowledge that the stocks here have been gradually but seriously reduced, and were quite insufficient to meet any extra demand which might spring up from the consumers. Whatever the cause, however, so sudden and violent a change is deserving of serious consideration; for it is clearly contrary to commercial prudence and foresight, that the dealers in a staple commodity like iron should be caught bare of stock, at a time when a demand arises, after enjoying abundant opportunities of supplying themselves at rates which past experience should have taught them were to be considered safe. We have as yet no means of testing the soundness of the advance, and it may yet turn out to have originated with parties incapable of maintaining it; but that it has occurred is enough for our present purpose, and amply sufficient to justify the opinion which we have from time to time offered to our merchants, that they would do well to avail themselves of the low prices so long ruling, and supply themselves with stock. That they have not done so is the point requiring investigation; and we venture to think, that an explanation will be found in the too general habit of our dealers to regulate their operations exclusively by what they estimate as the probable wants of their consuming customers, and the control which they conceive such wants will exercise over the Glasgow market. That this is a very mistaken idea, to the extent to which it has obtained, the present state of the market is a sufficient proof; and we would suggest, for the future guidance of the trade, that they should bear in mind the important point—that of the entire of the Scotch make, a proportion approximating to one-half is taken off the market for export alone. Hence it is clear that, though the demand for consumption in the manufacturing districts of England must always exercise an important influence upon the production of the makers, it cannot, and does not, operate upon the market to the extent generally supposed. Again, with respect to the excess of make over export, it should always be remembered that a large proportion is often held in the hands of speculators, backed by the makers, who have always shown themselves ready and able to encourage and to sustain such a movement; and thus, when prices are low, iron is not pressed upon the market, but held for better times. On a previous occasion, we endeavoured to indicate the principle which regulated the operations of the speculators, and, to a certain extent, something of the same character should rule the proceedings of the dealer. This principle we described as one which looked ahead—which took a prospective view, while it did not lose sight of passing events; and hence, when the taste for railway speculation had subsided, and cotton had reached a point which rendered it comparatively hazardous, speculators judged, and we think correctly, that the low price of iron would, in the course of time, attract attention; and from this we believe the present improvement has, no doubt, proceeded. We have stated above that we are unable to give an opinion how far the present speculation may succeed; it will be sufficient for our present purpose to remember that, last year, a similar unexpected rise took place, and reached a point considerably in advance of the present rates; but we repeat, that, even should the present rise not be maintained, we are of opinion that before long a great and successful speculative movement will take place in Scotch pig-iron. A fair business was doing to-day; there were eager buyers at 49s. 6d. per ton; and 50s. has been paid for iron at Runcorn and Fleetwood, and even at this price small quantities only were offering. On the whole, we should say, there was a decidedly improved feeling perceptible.

New Patents.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

J. W. Hancock, Melbourn, Derby, manufacturer, for improvements in the manufacture of hosiery goods, or articles composed of knitted fabrics.

C. Cowper, Southampton-buildings, Chancery-lane, for certain improvements in the manufacture of sugar. (Being a communication.)

C. E. F. C. P. De Changy, of Brussels, now residing in Tavistock-street, Westminster, civil engineer, for improvements in the preparation and manufacture of flax, hemp, and other like fibrous substances.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

W. Leschallas, Budge-row, metallic lock envelope.

Lutge and Co., King Edward-street, attachment or connection between the linings and fur portions of lined fur articles.

T. F. Hale, Bristol, plunge-cock.

W. Naylor, James-street, Oxford-street, glass ventilator for window-sashes.

C. Macintosh and Co., Manchester, buckle.

J. Elce and Co., Phœnix Iron-Works, Manchester, dynamometer.

T. K. Potter, Huddersfield, Victoria spirit lamp.

S. Butler and Co., Birmingham, revolving heel for boots, shoes, and clogs.

William Macbay, Woolwich, Quarter-Master Sergeant, Royal Artillery, mercantile fountain pen.—*Mechanics' Magazine.*

THE BRITANNIA BRIDGE.

MENAI STRAITS, NOV. 23.—Mr. Stephenson arrived here yesterday (Friday) afternoon, to inspect the preparations, now nearly complete, for floating the next tube on the 3d December. Mr. Fairbairn (the engineer), who carried out the experimental and constructive details connected with the tubes also, in company with some eminent German engineers, visited the tubes, with the intention of making them models for the construction of a similar fabric over the Rhine. The operations for the floating are going on day and night, and the pontoons, with their anchors, ropes, stoppers, and tackle, are already in position. The necessary notices have been given to the various harbour masters and vessels that the navigation will be stopped for that day. The operation of floating will be far easier, it is expected, than it was before, owing to experience acquired from the past, and to the tube being at starting so much nearer its destination. No delay whatever will arise from the failing of the cylinder, which will be in its place to-day. Nothing but an extraordinary wind will affect the great operation. A full tide of 18 feet is indispensable.

Yesterday, numbers of men were busily engaged in joining the tubes on the towers, casting red-hot rivets, and hammering them into the iron plates. Altogether, on different parts of the works, there were between 500 and 600 men in full occupation. The wind is higher here than in most parts of England, owing to the openness of the estuary of the Straits, in order to ascertain with accuracy the total amount of pressure per square foot, a wind guage is being erected on the top of the Britannia-tower. Though the wind blew what nautical men call "great guns" through the channel, it had, when measured by reflectometer, no perceptible effect on the tube already raised, and which is asserted to be as solid as either the Box or the Kilsby tunnel. There appears to be no doubt as to the successful floating and elevation of the second tube on the 3d inst. A novelty, in the shape of loopholes of light, to give glimpses to passengers passing through, is to be introduced, at the suggestion of Mr. Clark. At intervals of 12 ft. apart, little oval windows, 5 in. in diameter, are to be introduced right and left along the tube, so as to admit light, and show the landscape.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 198 9½	Belgian, 4½ per Cent., 85½
3 per Cent. Reduced Ann., 93¾ ⅞ ¾	Dutch, 2½ per Cent., 54⅞ ¾
3 per Cent. Consols Ann., 94⅛ ⅞ ¾ ⅞ ¾	Brazilian, 5 per Cent., 85
3½ per Cent. Ann., 94 ⅞ 3⅞ 4 3⅞	Chilian, 6 per Cent., —
Long Annuities, 8⅞ ¾	Mexican 5 per Cent., ex Coup., 26¾ ⅝ ¾
India Stock, 10½ per Cent., 259 61	Russian, 5 per Cent., 109
3 per Cent. Consols for Acc. 94⅛ ⅞ ¾ ⅞ ¾	Spanish, 5 per Cent, 17
Excheq. Bills, 1000*l.*, 1½d. 47 50 pm.	Ditto 3 per Cent., 36½ 37

MINES.—The mining share market continues firm, at last week's quotations, whilst in some instances an advance has taken place. Our local correspondents advise us of improvements in several of the leading mines, with steady and progressive returns in others.

In Devon Great Consols there has been several transactions during the week. The directors, at their meeting held yesterday, declared a dividend of 5120*l.*, being 5*l.* per share out of nett profits arising from sales of ores raised in the months of July and August last. After payment of this dividend, there will remain in hand a balance of 17542*l.* 13s. 2d., consisting of cash, ore bills not at maturity, and Exchequer bills applicable to the general purposes of the company.

Condurrow, Trehane, South Basset, Mendip Hills, and Mary Ann, continue in demand.

In Tincroft shares there have been many transactions, and the mine continues to prove highly productive. West Wheal Jewels have been done at an advance, owing to an improvement in the 70 fm. level west. These shares have been dormant for several months past.

We understand that the lode recently discovered in Wheal Adams continues to be extraordinarily productive.

Camborne Consols silver lode still continues to improve.

Shares in the following mines have changed hands:—Devon Great Consols, Tincroft, Trelawny, Trehane, West Caradon, West Wheal Jewel, Mary Ann, Tincroft, East Tamar, South Tamar, Bedford United, Stray Park, Mendip Hills, South Josiah, Tamar Consols, East Wheal Rose, South Wheal Frances, South Tolgus, Treviskey and Barrier, Bwlch Consols, Kirkcudbrightshire, and Comfort.

At Treviskey and Barrier account, a dividend of 5*l.* 10s. per share was declared for Treviskey, leaving balance in hand 50*l.* 14s. 8d., with ore bills coming due. A profit of 624*l.* 1s. 7d. was made in August and September. The agent's report continues very satisfactory, having had a fine and productive lode in the 248; other points continue very good. 421 tons were sampled on the 14th, being upwards of 70 tons more than calculated on at the last account.

At Bedford United meeting, a dividend of 5s. per share was declared, being the third since last December.

At the East and South Tamar meetings, held on Thursday, the accounts presented showed the liabilities of the former mine at 1442*l.* 0s. 4d., and the assets at 2964*l.* 3s. 2d. South Tamar liabilities are 1018*l.* 15s. 11d., and the assets 3120*l.* 16s. 1d. Mr. Wolferstan, the managing agent, gave a very gratifying statement of the prospect of the mines.

Wheal Fortescue adventurers held their account on the 20th, when a balance of 9*l.* 3s. 4d. was found in favour of the company; the account ran from March to October. A call of 1*l.* per share was made; and the prospects of the mine have considerably improved.

At East Buller bi-monthly account, a call of 10s. per share was made.

At a general meeting of the Bishopston Silver-Lead Mines, it was resolved to erect a steam-engine immediately, of sufficient power to enable the large and productive lodes, recently discovered in this extensive sett, to be fully developed.

The Cwm Erfin adjourned meeting was held yesterday, and was further postponed to next Tuesday, when Capt. Barbery is expected to attend.

The Pennant and Craigwen Mines have been visited by a deputation from London, accompanied by Mr. John Taylor, jun. This gentleman, after inspecting the mines, has addressed a letter to the secretary, recommending the operations which he considers necessary for fully developing the mines.

In foreign mines the transactions have been chiefly, St. John del Rey, United Mexican, Copiapo, Imperial and National Brazilian; but we do not learn that business to any extent has been done.

The Brazilian mail has brought the usual dispatches from the mines in that country. The Imperial Brazilian directors are without letters from their commissioner, receiving only the gold report to the 22d Sept. The returns from Gongo Soco, from the 22d Aug. to 22d Sept., are 7 lbs. 2 ozs. 14 dwts.; Bananal for the same period, 1 lb. 11 ozs. 11 dwts.=9 lbs. 2 ozs. 5 dwts.

The National Brazilian advices are to the 3d Sept., and report a very promising improvement in the adit level, from which some very satisfactory samples of gold had been taken, and from whence large returns were daily expected. The produce from Cocaes, from 24th Aug. to 3d Sept, is mks. 8 3 0 6. A remittance of mks. 69 3 1 39, or about 560 ozs. of gold, has been received.

The St. John del Rey letters are to the 28th Sept. The profit for the month of August is shown as 3821*l.* 15s. 2d., arising from 21,434 oits. (less the duty), the produce for the month. The supply of stone is represented as abundant, and improved in quality. Every exertion is being made for the encouragement of free native labour; when effected, the resumption of operations in another portion of the company's property is contemplated. The present report is highly encouraging. A remittance of 43,117 oits., or 414 lbs. troy, was to have left the mines on the 18th for Rio, per the first packet.

The usual weekly report from the Linares Silver-Lead Mines (Spain) continues to furnish the proprietors with considerable encouragement as to future prospects. The indefatigable manager represents the operations, as far as he has been enabled to examine, to have been extensive, and from the appearances of portions of the lode, and the arches of ore left, that the lodes must have been highly productive and rich. The engine continues to perform her duty well, and the water was gradually retiring to the second level, and which before now, we expect, has been inspected.

The report from the Australian mines has been received for the month of July. The Tungkillo Mine, in particular, continues to be productive in Goad's winze and stopes, and other points in the mines are likely to become highly remunerative.

Her Majesty's brig, *Pandora*, arrived at Spithead from the Pacific on Friday evening, having on freight, in Californian gold, $80,000. The *Express* packet arrived at Falmouth on the 17th from the Brazils with the mails, and bringing freight in specie to the value of 30,000*l.*

We are glad to learn that the Institution of Civil Engineers has awarded to our correspondent, Joshua Richardson, Esq., C.E., of Neath, the Council's Premium of Books, value *ten guineas*, for his paper on the "Coal Field and Collieries of South Wales," &c.

SALE OF LIFE ASSURANCE SHARES.—At the Auction Mart, yesterday, 20 100*l.* shares in the Law Life Assurance, Fleet-street, 10*l.* called and paid, dividend 1*l.* 16s. per annum; these shares can only be held by members of the legal profession—sold for 43*l.* 10s. per share. One hundred 50*l.* shares in the Solicitors' and General Life Assurance Office, 25s. paid, dividend 4*l.* per cent.; these can only be held by members of the legal profession—sold for 1*l.* per share. Twenty 100*l.* shares in the Australian and General Life Assurance and Annuity Company, 10*l.* paid—sold for 1*l.* per share.

LOETCHEN VALLEY SILVER-LEAD MINING AND SMELTING COMPANY.—This company, by a judicious outlay of from 30*l.* to 40*l.* in making a sledge-road from their mine to the foot of the mountain, have avoided the alarming expense of an incline with a double line of rail, by a very simple plan. The contractor has delivered above 200 tons of mineral per week, and will continue a like quantity as long as the weather remains open. He is, we believe, under a contract to deliver, at the least, 300 tons per week during the whole of the ensuing summer.

WHITE'S PATENT HYDRO-CARBON GAS.—We noticed in the Journal of Saturday last, that the town of Southport had at length been lighted up through its whole extent with this gas, to the delight of its inhabitants. From the *Southport Visitor*, of last Saturday, we make the following extract:—"Our noble Broadway was on Monday evening last one blaze of light; and this great experiment of Mr. Stephen White, so far as producing a most brilliant light, was perfectly successful. This invention has been looked upon with suspicion, and by some even with ridicule; but 'let those laugh that win;' we conceive Mr. White has won, and that he will eventually receive, the prize. He has succeeded in making the entire apparatus all but perfect for the production of a most brilliant gas, at a cost that, as the consumption increases, will create a sure and certain revenue for the town. We congratulate Mr. White on the success of this first great experiment of his patent. He has worked hard, being determined that the Southport gasworks should be a model for the erection of others throughout the kingdom."

THE LONDON AND NORTH-WESTERN, AND THE NORTH STAFFORDSHIRE COMPANIES.—We find in the *Morning Herald* of yesterday the following paragraph:—"We noticed, a few days since, that some serious differences had arisen between these two companies, relative to the agreement of 1845, by which the Manchester traffic of the old London and Birmingham Railway was to have been carried over a portion of the North Staffordshire line. The North Staffordshire directors have given the London and North-Western Company notice that they intend to take legal proceedings in the matter. A special meeting of the London and North-Western board will meet on Saturday (to-day) for the purpose of taking this very disagreeable affair into consideration."—We are in a position to state that this matter is looked upon by the directors as a most serious affair, and we have reason to believe that the discussion which may arise at the board will be of a very animated and, we fear, not very harmonious character.—*Railway Record.*

At a meeting of the Metropolitan Commission of Sewers, yesterday, Mr. F. Foster was appointed engineer to the commission, at a salary of 1500*l.* per annum, including expenses for travelling, within the limits of the jurisdiction of the court.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	9 ..	9
1024	Alfred Consols	8¾ ..	7 8
1024	Ashburton United Mines	8¾ ..	12
1024	Balleswidden	9 ..	16
128	Balnoon Consols	42¼ ..	50
1000	Barristown	5¾ ..	1½ 2
3650	Bawden	¼ ..	¼ ½
6000	Bealbury	1 ..	¼
4000	Bedford	2½ ..	3 3½ 4
1280	Birch Tor & Vitifer	10¾ ..	6¾ 7
2500	Black Craig	6 ..	10
8000	Blaenavon	50 ..	10
5000	Blisland Consols	1 ..	5¼
100	Botallack	182 ..	30
120	Brewer	5 ..	2¼
256	Brimpts Tin	2½ ..	2¼
10000	British Iron, New, regis.	12 ..	8
—	Ditto ditto, scrip	10 ..	10
2400	Bryn-Arian	2 ..	6 6½
107	Budnick Consols	52¼ ..	10 12
1000	Callington	22 ..	7 8
1000	Camborne Consols	7 ..	7½ 10
20000	Cameron's Steam Coal	7 ..	1
256	Caradon Mines	22¼ ..	10
256	Caradon United	24 ..	5 8
256	Caradon Wh. Hooper	21 ..	4½
1000	Carn Brea	15 ..	105
3000	Carthew Consols	1¼ ..	7
114	Charlestown	220 ..	—
500	Comblawn	5¼ ..	4½
128	Comfort	45 ..	86 100
256	Condurrow	20 ..	87 90
2560	Cook's Kitchen	14 ..	2½ 3
1000	Coombe Valley Quarry	4½ ..	5
1000	Copper Bottom	1¼ ..	6¼
900	Court Grange	7 ..	10
212	Craddock Moor	23¼ ..	5
128	Creeg Braws	120 ..	30
500	Cubert Mine	12¼ ..	—
1000	Cwm Erfin	3¼ ..	2 2½
7100	Derwent	8¼ ..	5
845	Devon & Courtenay Con.	7¼ ..	1½
1024	Devon Great Consols	1	185 190
1000	Dinnrode	2 ..	5
182	Dolcoath	30 ..	15
2560	Drake Walls	5¼ ..	3
10000	Durham County Coal	45 ..	9
3000	Dyngwm	10 ..	10 12
512	East Alvenney	5¼ ..	6
2500	East Birch Tor	3 ..	3
1024	East Buller	1 ..	3¼
112	East Caradon	47 ..	47
2048	East Crowndale	6¼ ..	4
128	East Pool	15 75	75 80
9000	East Tamar Consols	¼ ..	¾ 1
258	East Tolgus	1½ ..	4
94	East Wheal Crofty	125 ..	65
128	East Wheal Rose	50	605 630
—	East of Scotland Iron Co.	5 ..	1½
123	East Wheal Seton	14 ..	10
1280	Esgair Llee	1¼ ..	2 4
248	Exmoor Wh. Eliza	6 ..	6
494	Fowey Consols	40 ..	45
1024	Frieldd Llwydd Mines	1¼ ..	3¼
4000	Gen. Mining Co. for Irel.	1¼ ..	1¼
256	Gonamena	44¼ ..	16
128	Goonvrea	4 ..	2
256	Grambler & St. Aubyn	80 ..	10
100	Great Consols	1000	220 230
512	Gt. Wh. Rough Tor Con.	24¼ ..	18 20
6000	Gruwa Slate Company	5 ..	5
256	Hawkmoor	12¼ ..	65
6000	Heigustou Down Con.	1¼ ..	¼
1500	Hennock Silver-Lead	1s ..	2
4500	Hennock Iron & Tin	21s ..	21s
256	Herodsfoot	27 ..	9 10
10000	Hibernian	12¼ ..	1½
1000	Holmbush	22 ..	6
1024	Kingsett and Bedford	1¼ ..	3½ 4½
787	Kirkcudbrightshire	8¼ ..	1½ 2
2048	Lamberooe Wh. Maria	8 ..	2¼
252	Lanarth Consols	— ..	4
128	Lelant Consols	90 ..	40 50
160	Levant	— ..	180
1000	Lewis	17 ..	9¼ 10
1000	Llwynmalees	8 ..	8 10
3500	Llynvi Iron	50 ..	50
253	Lostwithiel Consols	23 ..	10
6000	Marke Valley	10 ..	¾ 1
5000	Mendip Hills	3¼ ..	3 3¼
128	Metha	34 ..	—
20000	Mining Co. of Ireland	7 ..	4½
256	New East Crowndale	3¼ ..	2¼
100	North Pool	45 ..	530
140	North Roskear	5¼ ..	150
262	North Wh. Leisure	1¼ ..	2
256	North Wheal Basset	10 10	12 15
15000	Northern Coal Co.	23 ..	2
12	Old Wheal Prosper	— ..	75
128	Par Consols	55¾ ..	650
1248	Pengelly Tin	1 ..	1
8000	Pennant & Craigwen	2½ ..	2
1024	Penzance Consols	22s 3d.	4
512	Plymouth Wh. Yeoland	6¼ ..	6
200	Polsaith Consols	5¼ ..	4¼
2500	Rhoswiddol & Bacheiddon	10 ..	10
10000	Rhymney Iron	50 ..	13
10000	Ditto New	7 ..	6¼
1000	Rosewall Hill	1 ..	5

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
256	Rosewarva Mines	— ..	12
2048	Runnaford Coombe Tin	½ ..	5
9000	South Tamar	½ ..	1½ 2½
128	South Caradon	5 ..	200
1100	South Dolcoath	5 ..	¾ 1
256	Sth. Friendsh. Wh. Ann	30 ..	28 30
256	South Molton	5 ..	12 13
256	South Tolgus	16 70	80 82
256	South Trelawny	28¼ ..	5
2000	South Wales Mining Co.	¼ ..	1 1½
128	South Wheal Basset	20¾	380 400
124	South Wh. Frances	160	280 300
256	South Wh. Josiah	1½ ..	5 6
1000	South Wh. Maria	2¼ ..	1½
10000	Southern & Western, Irish	2¾ ..	4
280	Spearne Moor	30 ..	40
94	St. Ives Consols	— ..	80
128	St. Michael Penkivel	5 ..	10½
999	St. Minver Consols	1 ..	6
1000	Stray Park	43 ..	22 23
9600	Tamar Consols	3 ..	8¼
10240	Tavistock Consols	¼ ..	¼ ½
1024	Tavy Consols	6¼ ..	1½
6000	Tincroft	7 ..	11 12
58	Tokenbury	170 ..	10
120	Tolcarne	8 ..	10
256	Tregorden	3¼ ..	4½
256	Trehane	1½ ..	30
5000	Treleigh Consols	6 ..	3¼ ¾
2000	Trenance	3 ..	—
96	Tresavean	10 ..	95
120	Trethellan	5 ..	15 17
120	Treviskey and Barrier	130	125 130
1000	Tyllwyd	2 ..	2¼
200	United Mines	50 ..	155
256	Wellington Mines	25 ..	35
128	West Buller	10 ..	375
256	West Caradon	20 ..	95 100
512	West Fowey Consols	40 ..	12
—	West Par Consols	2½ ..	—
512	West Providence	9 ..	28 30
200	West Seton	45	180 190
120	West Trethellan	5 ..	5
512	West Wheal Frances	1½ ..	3
256	West Wh. Friendship	9 ..	8
3725	West Wheal Jewel	12 ¾	1¼ 1½
256	West Wheal Tolgus	80 ..	5
256	West Wheal Treasury	27¼ ..	10 15
1024	Whiddon Mines	4¼ ..	2
5200	Wicklow Copper	5 ..	8½ 8¾
107	Wheal Adams	139 ..	80 100
1000	Wheal Agar	— ..	6
256	Wheal Albert	10 ..	1
240	Wheal Anderton	28 ..	15 20
128	Wheal Ann	— ..	50¼
512	Wheal Anna Maria	7 ..	4
120	Wheal Bal	5¼ ..	10
256	Wheal Benny	14¼ ..	2
1024	Wheal Bray	10 ..	10
256	Wheal Biencowe	21 ..	12
232½	Wheal Calstock	9 ..	20 25
268	Wheal Courtney	20 ..	20
256	Wheal Fortescue	15 ..	—
388	Wheal Franco	27 ..	11 12
100	Wheal Henry	— ..	24
1024	Wheal Lawrence	2¼ ..	2¼
112	Wheal Margaret	79	225 230
512	Wheal Mary Ann	5 ..	27½ 30
5000	Wheal May	¼ ..	2
360	Wheal Oak	25¼ ..	5
3000	Wheal Penhale	1¼ ..	6
210	Wheal Prospect	4 ..	7
120	Wheal Reeth	41 ..	150
128	Wheal Rose	60 ..	3
198	Wheal Seton	214 ..	250
180	Wheal Sisters	35¼ ..	5
512	Wheal Sophia	5¼ ..	7
128	Wheal Spearne	10 ..	68 70
128	Wheal St. Ann	30 ..	35
550	Wheal Trescoll	10½ ..	19 20
260	Wheal Trelawny	7¼ ..	82 85
256	Wh. Tremaine (St. Ervan)	9¼ ..	2½
1024	Wheal Tremayne	9¼ ..	5½
267	Wheal Tryphena	140 ..	30
1000	Wheal Vincent	2¼ ..	7
128	Wheal Vlow (Perranz.)	1¼ ..	1½
184	Wheal Vyvyan	— ..	60

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14¼ ..	2¼ 2¾
15000	Asturian Mining Co.	15 .	2½
20000	Australian	3 ..	5¼
6000	Barossa Range	1⅞ ..	1⅞ ¼
3000	Bolanos	150 ..	—
2000	Ditto Scrip	15 ..	—
10000	Brazilian Imperial	23 ..	3 4
12000	Cobre Copper Co.	40 24	25 26
10000	Copiapo Mining Co.	14 ..	4 4½
20000	General Mining Ass'n.	20 .	10½
4000	Guadalcanal	5 ..	2 2¼
5000	Kinzigthal Mining Ass.	2 ..	1¼
5051	Mexican Company	59¼ ..	—
2000	Mexican & South Amer.	8 ..	1 1¼
5000	National Brazilian	30 ..	3¾
104000	N. Brit. Australasian	1 ..	⅛
7000	Royal Santiago	10 ..	5¼
11000	St. John del Rey	15 ..	11¼ ⅜
13174	United Mexican ... Av.	28¼ ..	4¼
10,000	Worthing (S. A.)	2 ..	2¼

**** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

RAILWAY TRAFFIC RETURNS.

Names of Railways.	Length. 1849	Length. 1848	Present actual cost.	Price p. share	Div. 1848	Traffic Returns, 1849	Traffic Returns, 1848
Aberdeen	33	16	1,000,547	12 13	—	£671	£362
Belfast and Ballymena	37¾	37¾	514,968	19¾	5*	401	382
Birkenhead, Lancashire, & Chesh.	19	15	1,088,804	37	5†	720	687
Bolton, Blackburn, & West Yorksh.	14	—	786,384	5½	—	425	226
Bristol and Exeter	85¼	75¾	2,660,490	51	—	3146	—
Caledonian	154	141	5,149,320	10¾ 11¼	3	6022	4529
Chester and Holyhead	84	59¾	3,358,217	10	4	1282	1126
Dublin and Drogheda	35¾	35¾	778,565	27½	—	—	673
Dublin and Kingstown	7¾	7¾	895,915	—	—	605	655
Dundee, Perth, & Aberdeen Junc.	47¾	47¾	544,554	13¾	6¾	945	932
East Anglian (Lynn to Ely)	91¾	55¾	1,247,446	1⅞	—	718	717
East Lancashire	75¾	24	2,628,519	13 12½	5	2719	1523
Eastern Counties and Norfolk	322	295	12,027,069	6⅞	—	13949	13125
Eastern Union	78	50¾	1,782,703	13	—	1572	1227
Edinburgh and Glasgow	57¾	52¾	2,923,199	28½	6	3459	3402
Edinburgh and Northern	78	34	2,241,276	10⅞	2	—	2003
Glasgow, Paisley, and Ayr	102¾	74	2,574,330	59	3	2715	2408
Glasgow, Paisley, & Greenock	23	23	852,846	14¾	2	931	884
Gt. Northern & East Lincolnshire	143	—	5,138,756	6¾	5†	2758	—
Gt. Southern & Western, Ireland	168¾	110¾	3,552,589	31 30¾	6†	3665	3137
Great Western	230¾	206¾	11,867,042	55 56	6¾	16461	17625
Lancaster and Carlisle	90	70	1,476,102	48	4¾	3331	2179
Lancashire and Yorkshire	206¾	127¾	10,063,862	50	5¾	11500	10128
Liverpool, Crosby, & Southport	13	—	84,455	3⅞	—	90	72
London and North Western	478	428	26,251,635	111 112	7	38217	36274
London and Blackwall	5¾	4	1,299,675	3⅞	1-12	494	564
London, Brighton, & South Coast	170	162¾	6,502,600	75½ 7	2¾	8576	7683
London and South-Western	220¾	194	7,874,259	30¾	5¾	8368	8360
Londonderry and Enniskillen	14¾	14¾	185,739	16	—	135	—
Manchester, Sheffield, & Lincolnsh.	157¾	94¾	6,598,260	18	5	4566	2739
Midland Company	471	423¾	15,133,779	16¾ 47¾	5¾†	20775	19691
Midland Great Western (Irish)	50	36¾	725,332	22¾	4†	1509	1302
Monklands	36	—	486,245	—	6	718	—
North British	122	83	3,649,055	11	4¾	3511	2576
Scottish Central	45¾	—	1,364,228	15	7	1259	918
Shrewsbury and Chester	43	23	969,618	12	5	1308	1183
Shropshire Union	30	—	—	3	—	350	—
South Devon	57¾	29	1,909,232	5½	5	1326	1326
South-Eastern	189¾	165¾	8,666,007	18 ⅛	5¾	8935	7415
Taff Vale	38	40	879,110	—	7¾	1691	1993
Ulster	36	36	723,829	45¾	—	715	767
Waterford and Limerick	25	—	512,894	—	—	—	—
West Cornwall	13	—	—	—	—	254	277
Whitehaven Junction	12	12	150,879	9¾	3	201	201
York, Newcastle, & Berwick	290¾	242¾	6,827,849	16¾ ⅛	7	11799	13473
York and North Midland	256	234	4,983,618	18¾ ⅞	7	5989	7019

In the Master's Office in Chancery, on Saturday, the case of the North-Western Railway Company *v.* Crouch, the carrier, came on. The defendant had claimed against the company for lost parcels and over-charges, and brought an action to recover above 200*l.* Thereupon the company filed a bill of discovery of 710 folios length. The defendant had filed an answer, which extended to 3200 folios, and the company now objected to five passages, as unnecessary, and excepted thereto. Master Senior allowed one of the exceptions in respect of the summing up of Chief Justice Wilde, at Warwick, amounting to about 12 folios, and over-ruled all the others, with proportionate costs.—*Railway Times.*

JOINT-STOCK BANKS.

Shares.	Companies.	Paid.	Div. p. cent.	Price.
22,500	Australasia	£40	£8	£24
20,000	British North American	50	6	40½
20,000	Colonial	25	6	6½ 6¾
20,000	Commercial of London	20	5	20½
60,000	London Joint-Stock	10	6	17½ 17
40,000	London and Westminster	20	6	25
10,000	National Provincial of England	35	5	36½
20,000	National of Ireland	22½	6	18½
20,000	Provincial of Ireland	25	8	39½
10,000	South Australia	22½	—	17½ 18
20,000	Union of Australia	25	6	2¾
60,000	Union of London	10	6	11½

MEETINGS DURING THE ENSUING WEEK.

MONDAY........Esgair Llee Mining Company—offices, at Eleven.
Bodcal Mining Company—offices, at One.
British American Land Company—offices, at One.

TUESDAY........Asturian Mining Company—offices, at One.

WEDNESDAY....London and South-Western Railway—offices, at One.
Rock Life Assurance Company—London Tavern, at Twelve.

THURSDAY......Guadalcanal Silver Mining Association—offices, at One.
Medical, Invalid, and General Life Assurance Company—offices, One.

FRIDAY..........Alten Mining Association—offices, One for Two.
Hungerford Market Company—offices, half-past Twelve.
Watermen's Steam Packet Company—London Coffee-house, at One.

TESTIMONIAL TO JAMES WOLVERSTAN, ESQ.—It will be in the recollection of our readers, that at the last meeting of the East and South Tamar Mines, several of the shareholders expressed a desire to present a testimonial to Mr. Wolverstan, the manager, in token of their approbation of his conduct to the men under his charge during the prevalence of cholera at the mines. To carry out the intention of the subscribers, a committee, consisting of Messrs. W. A. Thomas, J. Browne, and J. Y. Watson, was formed; and, on Thursday last, after the meeting of the shareholders, a very handsome silver jug, or claret cup, together with a 50*l.* note, was presented to Mr. Wolferstan. In handing them to that gentleman, Mr. Browne, in a very appropriate address, stated that he believed the kindness and attention shown to the sick during the dreadful visitation (the cholera) had inspired the men with confidence, where, otherwise, all would have been despair. It had left a deep feeling of gratitude in the minds of the poor of the neighbourhood, and earned for him the admiration of the country, as was expressed by the numerous letters received by the committee. Mr. Wolferstan returned thanks in a very feeling address, assuring the shareholders that, whilst he considered he had only done his duty as a man, he could not but feel deeply grateful for the kind manifestation of approbation of his conduct—a kindness he could never forget. The jug bore the following inscription:—"To James Wolferstan, Esq., the manager, from the proprietors of the East and South Tamar Mines. This piece of plate was purchased with part of a subscription raised and presented to him on the 22d Nov., 1849, to evince the esteem felt by the subscribers for his humane, judicious, and untiring exertions in behalf of the miners in his employ, and the poor generally in the neighbourhood, who suffered from cholera during its prevalence in the months of August and September."

TRETHEVY COPPER.—The Caradon Copper Mine, recently suspended, in consequence of the insufficiency of the machinery to keep the water, is about to be resumed, under a newly-constituted company. The geological position of the mine, and the highly productive course of ore reported to have been discovered in the shaft, are, of themselves, a sufficient recommendation for an adequate outlay of capital, to give the mine a more effectual trial; and, from the enterprising character of the present company, there is every reason to calculate on this mine being worked with spirit, and, at the same time, with strict economy. For further particulars, we refer our readers to the proposed plan in our advertising columns.

LEAD ORES.

Ticketings at the King's Head Hotel, Holywell, November 22.

Mines.	Tons.	Price.	Purchasers.
Pen-yr-henblas	37	£10 7 0	Walker, Parker, & Co.
Ditto	37	10 6 0	Newton, Keates, & Co.
Westminster	35	9 12 6	Walker, Parker, & Co.
Jamaica	70	10 0 0	Mather & Co.
Belgraves	30	10 5 0	Walker, Parker, & Co.
Maes-y-safn	50	10 2 6	Ditto.
Milwr	30	11 17 6	Ditto.
Pant-y-celyn	30	11 15 6	Newton, Keates, & Co.
Peel	51½	11 15 0	Walker, Parker, & Co.
Ditto	23½	10 7 6	Ditto.
Cairnsmore	40	9 17 6	Mather & Co.
Australia	65	14 5 6	Newton, Keates, & Co.
Ditto	10	9 15 6	J. P. Eyton.
Ditto	1½	21 1 0	Ditto.
Conlig	80	10 2 6	Walker, Parker, & Co.
Black Craig	38	9 7 6	Newton, Keates, & Co.
Fron-fownog	10	13 7 6	Mather & Co.
Total tons	658½.		
Sold at the Mine.			
Wheal Mary Ann	73	16 11 6	Locke, Blackett, & Co.
Cwm Sebon	27	15 17 6	Newton, Keates, & Co.
Sold at Aberystwith.			
Goginan	55	£15 0 0	Walker, Parker, & Co.
Ditto	35	15 0 0	Ditto.
Frongoch	100	10 4 0	Ditto.
Total tons	190.		

SILVER-LEAD ORE.

Mines.	Tons.	Price per Ton.	Purchasers.
Callington	43	17 3 6	Tamar Company.

BLACK TIN.

Sold to J. H. Enthoven and Company.

Mines.	Tons ct. qr. lbs.	Price per ton.	Amount.
Ashburton United	4 3 0 15	£41 10 0	£172 10 0
Ditto	0 7 2 15	29 5 0	11 3 3
East Crowndale	3 0 0 0	41 2 6	123 7 6

COPPER ORES.

Sampled Nov. 7, and Sold at the Royal Hotel, Truro, Nov. 22.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Gt. Cons. Wh. Josiah	121	£6 10 0	West Caradon	77	£10 8 6
ditto	104	6 8 0	ditto	48	3 16 0
ditto	91	7 10 0	ditto	45	6 15 0
ditto	84	5 2 0	Fowey Consols	94	6 7 6
ditto	62	9 4 6	ditto	90	7 3 6
ditto	35	4 13 6	ditto	67	4 3 0
Wh. Fanny	90	5 10 6	Wh. Friendship	61	8 5 6
ditto	88	5 2 6	ditto	60	7 16 0
ditto	83	5 9 0	ditto	37	4 7 6
ditto	81	4 4 0	Poldice	54	4 12 6
ditto	69	5 7 6	ditto	43	4 13 6
ditto	61	11 6 6	ditto	38	4 8 6
ditto	38	8 3 0	ditto	2	27 0 0
ditto	36	10 17 6	Bedford United	119	7 11 6
Wh. Maria	79	10 12 0	South Crinnis	55	5 0 0
ditto	49	5 7 0	Phœnix Mines	35	5 9 6
Wh. Anna Maria	48	5 12 0	Wh. Maiden	30	4 19 6
West Caradon	93	6 12 6	Wh. Jewel	6	4 15 6
ditto	80	6 8 0	ditto	5	6 0 6

TOTAL PRODUCE.

Mines.	Tons.	Amount.	Mines.	Tons.	Amount.
Devon Gt. Cons. Wh. Josiah, Wh. Fanny, Wh. Maria, Wh. Anna Maria	1219	£8170 12 6	Wh. Friendship	158	£1134 13 0
			Poldice	137	672 18 6
			Bedford United	119	901 8 6
			South Crinnis	55	275 0 0
			Phœnix Mines	35	191 12 6
West Caradon	343	2417 0 0	Wh. Maiden	30	149 5 0
Fowey Consols	251	1523 1 0	Wh. Jewel	11	58 15 6

Average Standard..........£97 16 0 | Average Produce.............. 9¼
Average Price per ton........................ £6 11 0
Quantity of Ore..........2358 tons | Quantity of Fine Copper, 224 tons 13 cwts.
Amount of Money........................ £15,494 6 6
LAST SALE.—Average Standard........£102 1 0.—Average Produce...... 8¼.
Standard of corresponding sale last month, 98*l.* 1s.—Produce. 9¼.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Companies.	Tons.	Amount.
Mines Royal	208	£1222 7 9
Vivian and Sons	378	2898 12 6
Freeman and Co.	523	2837 8 2
Grenfell and Sons	56	275 0 0
Crown Copper Company	40	300 9 6
Sims, Willyams, and Co.	444	2783 3 8
Williams, Foster, and Co.	555	4499 15 8
Schneider and Co.	154	777 9 3
Total tons	2358	£15,494 6 6

Copper ores for sale on Thursday next, at the Royal Hotel, Truro.—United Mines 936—Consols 771—Treviskey 421—Tresavean 415—South Caradon 275—Par Consols 272—South Tolgus 247—Trethellan 232—Wheal Comfort 226—Perran St. George 168—Treleigh Consols 128—Grambler and St. Aubyn 54—Wheal Ellen 41—Richard's Ore 28—Great Tolgus 6.—Total 4220 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—Wheal Seton 621—South Wheal Basset 543—North Pool 520—Camborne Vean 510—East Wheal Crofty 474—Tincroft 468—Fowey Consols 246—Dolcoath 216—Condurrow 211—East Pool 178—Wheal Mary 150—South Wheal Frances 127—North Roskear 100.—Total quantity of ore to be sold, 4364 tons.

NOTICES TO CORRESPONDENTS.

*** We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"J. S."—The Treviskey and Barrier Mines will be noticed in an early Number.

"G. M." (Lincoln's Inn).—Grey cast-iron has a granulated fracture of a grey colour, with some metallic lustre. It is much softer and tougher than white cast-iron.

Francis Walker (Southgate).—Until the last century the metallic industry of England was at a low ebb. In May, 1518, there was a rising of the workmen of London against the foreigners who sold metal goods. Macpherson, adverting to it, says, "The pretended crimes of these foreigners were, probably, their working cheaper, and being more industrious than our own people, whose exclusive privileges kept the foreigners in the out parts, and out of the freedom." This rising was considered of such momentous importance, that the statute of Henry VII. was revived for their protection. In this it is enacted that "no merchannt straungers should brynge into the reolme of Ynglond to be souldo mans gyrdylles, harynis wrought for gyrdylles, poynts, laces of lede, purses, pouches, pynnes, knyvys, hangers, taylour sherys, sesors, and yrens, cobords, tonges, fyer forkes, grydyrons, stocks, cocks, keys, hinges, syny betyn gold or betyn silver, horse harneys, bittes, storroppes, currets, standynge candlesticks, hongying candlesticks, holy water scoppers, chafyinge dishes, hongying lavers, curtan rynges, closhes for glovea, bokelles for shoys, sponos of tynn and lede, cheynes of wire as well latten as of silver."

"T. C. S." (Baker-street).—Egyptian bronze was composed of two-thirds brass, and one-third copper.

"A Jeweller" (Bond-street).—According to Fontanier, a fine white crystal for fictitious gems may be obtained from 8 ozs. of white lead, 2 ozs. of powdered borax, ½ grain of manganese, and 3 ozs. of rock crystal.

G. Lacosse (Cannes).—"Morrce metallique" is called in this country crystallised tin plate. It is a variegated primrose appearance, produced upon the surface of tin plate by applying to it, in a heated state, some dilute nitro-muriatic acid for a few seconds, then washing it with water, drying, and coating it with lacquer. The figures are more or less beautified, according to the degree of acid and relative dilution of the acid. This mode of ornamenting tin plate is much less in vogue now than it was a few years ago.

"L. M." (Monmouth).—The value of the guinea was reduced from 21s. 6d. to 21s. in the year 1718, in pursuance of the advice of Sir Isaac Newton. The value of fine gold to fine silver was, consequently, rated in the Mint at 15 28·1364 to 1, and both metals were declared to be legal tenders in that proportion.

"Miner" (Forest of Dean).—The island of Elba possesses one of the richest iron mines in the world. Its existence appears to have been known from the earliest times. The ore is chiefly of the specular kind, and the mass constitutes an entire mountain, which is surrounded by others consisting of grahite, of which the island is almost wholly composed. The mountain, which is called Rio, is about 500 feet in height, and three miles in circumference, and its surface is covered with a reddish ochry earth, which in some places is several feet in thickness, and full of small shining scales of iron ore. Beneath this covering, the mass of the mountain consists of metallic ore, or, rather, accumulated masses, thrown together without any order of stratification. These masses are deposited in an ochry substance, which may be considered as their matrix; and besides the specular ore, which preponderates, other varieties are occasionally met with. The iron mines of Elba were wrought in the time of the Romans, by means of excavations carried into the mountain; but now the ore is extracted by the ordinary process of quarrying. It has been conjectured by some, that the mass of iron ore in the island of Elba is part of a great vein, of immense extent, running into the adjacent continent.

F. Morgan (King-street).—The River Kennet, in Berkshire, was made navigable by side cuts and pond locks in the early part of the last century. From near Reading it ascends 138 feet, by 11 artificial cuts and 20 locks, to Newbury, a distance of 18 miles. The locks are 122 feet long and 19 wide; barges 109 feet long, 17½ wide, and drawing 3½ feet of water, can travel on this canal. From Newbury, the Kennet and Avon Canal proceeds westward to Bath.

H. Vining (Regent-street).—No metals have been discovered in Newfoundland. The gold ore of the early navigators proved to be a worthless pyrites.

"A Working Man" (Drury-lane).—Mansfield stone is a species of marble, of close structure, and of a cream colour, durable, and fitted to receive a beautiful polish. Its hardness, however, renders the working of it so expensive, that more generally it is burned, and used as lime.

"An Enquirer" (Kennington).—There are five different species of glass, each requiring a peculiar mode of fabrication, and peculiar materials.—1. The coarsest and simplest form of this manufacture is bottle glass.—2. The next may be reckoned broad or spread window glass; an improved article of this kind is now made, under the name of British or German plate.—3. Crown glass, or window glass, formed in large circular plates or discs; this glass is peculiar to great Britain.—4. Flint glass, crystal glass, or glass of lead.—5. Plate, or fine mirror glass.

E. Harries (Louth).—The declared value of the British woollen manufactures exported from the United Kingdom in 1848, amounted to 5,733,828*l.*

"An Enquirer" (Barnes).—The produce of the Russian mines in 1845 was 76,800 lbs. of gold, and 54,000 lbs. of silver.

"J. B." (Mortlake).—The mountain of Ararat is situated in the north-eastern corner of Lesser Asia, in the province of Armenia. It is a mountain extraordinary for its magnitude, being at its highest point 17,260 feet above the level of the sea—an elevation considerably higher than that of Mont Blanc. It stands nearly midway betwixt the southern extremities of the Black and Caspian Seas, in 39 deg. 42 min. of north latitude, and 44 deg. 30 min. east longitude. Though placed close on the line of the immense chain of the Taurus, which extends from the eastern shores of the Black Sea far into the centre of Asia, Mount Ararat stands, in a measure, alone, and has a very grand appearance, the other hills in the neighbourhood being too insignificant in size to hide its proportions, or impair the majesty of its aspect. This great mountain is divided into two heads, respectively named the Great and Little Ararat, which form distinct cones, separated from each other by a wide chasm or glen. The two cones are about 12,000 yards apart at their summits. The peak of the Great Ararat is perpetually covered with snow, but the Lesser Ararat, which is nearly 4000 feet lower, is clear of snow in summer. The plain in which Ararat stands is watered by the Araxes (the Rakal of the natives); and at no great distance stands the large and populous city of Kars. The summit was ascended in 1829, by Professor Parrot.

"C. S. K." (Ulverstone).—Further particulars respecting Haig's apparatus for the transmission of air and gasses, can be obtained through Mr. Aickin, of the Minories.

"L. M." (Tower Hill).—According to the regulations of the French mint, the coins contain 9-10ths of pure metal and 1-10th of alloy. The franc, which is equal to 1 livre 3 deniers, weighs exactly 5 grammes, or 77·2205 English Troy grains. The gold piece of 20 francs weighs 102·96 English grains.

"G. M. F." (Lymington).—Fossil salt is usually found alternating with beds of clay, accompanying gypsum, sandstone, and limestone, sometimes in considerable beds, but often in detached masses, and also in veins. Mines of rock salt occur in Hungary, the southern part of Germany, at Vic in France, and also at Wreizka in Poland. The last of these are of prodigious extent, and afford annually 100,000 tons of this fossil production, without any appearance of exhaustion.

"An Engineer" (Chatham).—The celebrated Roman bridge, Pont St. Esprit, near Lyons, was reckoned one of the finest and boldest of the ancient bridges in France. Its whole length is upwards of 800 yards; it is very crooked, bending in many places, especially in those parts where the Rhone has the strongest current. The arches are from 15 to 20 fathoms wide, and have their feet, or the bottoms of the piers, protected by two pedestals, which project from them. The lower part of the piers consists of several courses of footings, jutting out like steps. Between the great arches there are smaller arches, like windows, that come down nearly to the top of the pedestals, about the middle of the pier. This mode of construction was adopted with a view of breaking gradually the mighty force of the Rhone. The several courses of steps jutting out from the piers were intended to oppose and break the stream by portions, and prevent it from coming with its whole force at once upon the fabric, and when the flood should rise so high as to cover the steps and pedestals, then the small window-like arches would assist to convey the water through, which might otherwise endanger the great arches.

"A Student."—Sulphurous acid gas has a suffocating odour; it is fatal to animal life, and extinguishes most combustibles, when immersed into it in an ignited state; hence it is sometimes resorted to for the purpose of extinguishing the burning soot in a chimney, as by throwing a handful of sulphur in such a case into the fire, it vividly maintains the combustion of potassium and sodium. At mean temperature and pressure, recently boiled water takes up about 33 volumes (37, Graham) of sulphurous acid gas. The solution has a sulphurous and somewhat astringent taste, and it bleaches many vegetable colours, but by keeping it acquires a sour flavour, and reddens the generality of vegetable blues. Upon some colouring matters, as that of cochineal, it has little action, but when it does destroy colour, the original tint may often be restored by a stronger acid; a red rose, for instance, is bleached by dipping into a solution of sulphurous acid, but the colour is restored by immersion in dilute sulphuric acid. According to Grotthus, the sulphurous acid and certain colouring matters combine into colourless compounds, which are decomposed by more powerful acids. A singular bleaching effect is produced upon some flowers, by burning a little sulphur, so that the fumes of the sulphurous acid may come in contact with their petals. The dark-coloured dahlias and hearts-ease may be thus amusingly variegated. Obtained by burning sulphur, this acid is much used in bleaching cotton goods, also for whitening silk and wool, and altering the colour of hops. It suffers no change at a red heat, but if mixed with hydrogen, and passed through a red-hot tube, water is formed, and sulphur deposited. Under the same circumstances, it is also decomposed by charcoal, by potassium, and sodium, and probably by several other metals. It undergoes no change when mixed with oxygen, unless humidity or water be present, in which case a portion of sulphuric acid is slowly formed. When mixed with chlorine, and in contact with water, sulphurous acid gives rise to sulphuric and hydrochloric acid, but the perfectly dry gases have no mutual action. So also bromine and iodine are without action on sulphurous acid, unless water be present, when sulphuric acid and hydrobromic acids are formed. The chloric, bromic, and iodic acids are decomposed by sulphurous acid, with the evolution of chlorine, bromine, and iodine, and the formation of sulphuric acid. When gaseous sulphuric acid is mixed with hydrochloric, hydriodic, or hydrobromic acid gases, they mutually decompose each other, and water and chloride, iodide, and bromide of sulphur are formed; but when these acids are in aqueous solution, they do not decompose each other. Peroxide of lead, or of manganese, added to the aquous solution of sulphurous acid, converts it into sulphuric acid, and destroys its odour.

A. Harrison (Birmingham).—At the brass manufactory at Hegermuhl, near Potsdam, the materials of one charge are commonly 41 lbs. of old brass, 55 lbs. refined copper (gahrkupfer) granulated, and 24 lbs. of zinc. This mixture, weighing 120 lbs., is distributed into four crucibles, and fused in a wind furnace, with pit-coal fuel. The waste varies from 2½ lbs. to 4 lbs. upon the whole.

T. Huntley (Bond-street).—The principal locality for amber is in eastern Prussia, on the coast of the Baltic, from Memel to Dantzic. It is here collected in several ways—in the beds of small streams which run near the villages, and in rounded fragments without bark, or in the sandbanks of rivers, in pieces thrown back by the sea, and rounded by the waves. If the pieces thrown up by the waters are not numerous, the fishers, clothed in a leathern dress, wade into the sea up to the neck, seek to discover the amber by looking on the surface, and seize it with bag nets, at the end of very long poles. They conclude a great deal of amber has been detached from the cliffs by the sea, when a many pieces of lignite are afloat. Another method is a regular mining operation: it consists in digging pits upon the borders of the sandy downs, sometimes to a depth of more than 120 feet. The last, and most hazardous, is by exploring the precipitous cliffs in boats, and detaching masses of loose soil from them with long poles, terminating in iron hooks. They search the cliffs with great care where the amber nodules commonly lie, and loosen the seams with their hooks. Sometimes the boats are broken against the precipices, or sunk by the rubbish.

*** We should feel obliged to all pursers, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal.

"J. W. W." (Albemarle-street).—We shall be enabled, in our next, to give some information on the patent improved iron wire rope, with its application for mining purposes.

METALLURGICAL TREATMENT OF ORES.—The continuation of this series of papers, by Mr. Mitchell, will appear in our next Journal.

Received—"A Constant Reader" (Alston)—"A Shareholder" (Leeds)—"W. R."

*** It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, NOVEMBER 24, 1849.

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It gives us great pleasure to be able to renew the statement which for several weeks past, we have been enabled to make—viz.: that the mining operations of the kingdom at large are in full activity, and characterised by a full measure of productiveness Of course it is impossible that, in so wide an occupation as that of mining, there should not be local and partial fluctuations, and possibly depressions, even in the most prosperous times; it is enough for us, and enough for all reasonable and practical men, that the tone of the whole business is steady, and re-assuring in all its departments. There are tidings from the American continent, not now from the northerly portions of that great section of the globe, but from a region south of the isthmus, of new discoveries of gold; but we wait its confirmation. It certainly is strange that, after three centuries of access, and nearly as long a period of search for the most precious of the current metals, we should now, when no discoveries in that direction are being prosecuted, or expectation of such prizes is entertained, the world should be all at once presented with the universally coveted rarity in an almost fabulous abundance; but strange thin gsare, nevertheless, sometimes very true,—for truth is sometimes a stranger thing than fiction itself. The week has seen an elevation in the price of Consols of nearly 2 per cent.; the latest quotations are a shade or two over 94. This is significant of the general stability of business in the great mercantile and monied circles. We believe it is not unconnected, also, with the understood prosperity of the public revenue for the current quarter. We have before noticed the mutual dependence of the multiplied branches of trade and commerce upon each other, and we point to the same prevailing and interesting fact just now; but our chief gratification is, that the business of mining in Great Britain is advancing with as steady a step, and, in its proportion, marking its laborious path with as many material benefits as any other branch of our multitudinous industry.

We have seldom either occasion, or the inclination, to make special reference to advertisements in our columns; but one appears in our Paper of to-day which tempts us to deviate from that rule. We allude to the announcement of a proposed testimonial to Mr. SHARP, for his services to the mining interests of the country, in opposing the COPPER AND LEAD DUTIES BILL, in Parliament, during the session of 1848. From an early period of the session to its last day, he applied his talents, with all the zeal, energy, and perseverance that, as we well know, belong to his character, for the protection of native industry, and to secure to the British miner those rights to which he is fully entitled. We speak from personal knowledge of his exertions, as our columns, at various periods during the session, bore strong evidence of them. From the period when Ministers first announced their intention of removing the moderate protecting duty which applied to copper and lead, Mr. SHARP laboured to prepare the evidence necessary for the information of Members, and intended to be submitted to the Select Committee moved for by Sir CHARLES LEMON, as an amendment upon the ministerial resolutions. When that reasonable proposition was negatived, at the instigation of Government, and the question was deemed hopeless by many, so far far from yielding to any such feeling, Mr. SHARP redoubled his exertions, working, without relaxation, almost day and night, to make converts to the cause of protection to British industry, and to strengthen the ranks of its advocates. To what extent he succeeded in that object—and we quite believe the labour was his own—may be inferred from the fact, that, in the several divisions which took place, with all the advantages that Ministers usually possess, within 10 days of the close of a session, the majorities which they obtained in both Houses were very small; on one occasion only *four*; and, but for circumstances represented, at the time, as little creditable to Ministers, it is quite understood that the bill would have been thrown out, upon the second reading in the Lords.

With the knowledge we possess on the points we have named, and the assurances in the statement of the gentlemen interesting themselves in the proposed testimonial—who are, probably, better informed upon that subject than ourselves—that, during the whole of the struggle of seven months, the entire expense of conducting it, in London, was defrayed by Mr. SHARP out of his own means (and what the expense of a Parliamentary contest is, however economically conducted, will be known to many of our readers); and that he sustained other heavy losses, by reason of his close attention to that one question. With all these facts before us, we feel no surprise on learning that he is above 1000*l.* the worse for devoting his time and resources to the support of the mining interest. And it is because we believe this, and have reason, with our readers, to appreciate the labours of Mr. SHARP,—for it is but right here to add, that it is to that gentleman we are indebted for the able and laboriously-compiled quarterly statistical digests of the sales of ores in Cornwall and Swansea, which have appeared in our Journal,—that we express our honest conviction that, when the facts become known to those interested in our mining prosperity—and we can well understand, as it is stated in the advertisement, "that very few have been at all aware of even the name of the party" who thus fought their battles—they will hasten to mark their appreciation of those efforts, by affixing their signatures to a testimonial which, under the circumstances, must be regarded less as a mere matter of approbatory feeling, than as a simple act of justice.

In our Journal of the 29th September appeared a report of the meeting of the BOLANOS MINING COMPANY, held at the London Tavern the 26th of the same month; and on that occasion the directors proposed to raise an additional capital of 42,000*l.*, in order to pay off the existing liabilities, and further explore the promising mine of El Bote. Notwithstanding the advantageous terms offered by them to the public, they have been unsuccessful in their efforts, only about 13,000*l.* having been subscribed. A previous attempt had been made to raise capital, under somewhat different terms, which was likewise abortive. At that period we stated that, however encouraging the prospects of the mines were, they could not be worked without increased capital, and another failure to raise that would result in their ruin. Unfortunately, our worst anticipations have been realised; and our readers will see, from the report in another column, that the Bolanos Company, although not dissolved, is *virtually defunct*—the mine of El Bote, which was their sheet anchor, being restored to the owners, who take on themselves the present liabilities of that mine, with the intention of forming a new company, to be called the "CERRO DEL BOTE MINING COMPANY," for the purpose of working the three setts of San Eligio, San Jorge, and Nueva Valenciania, in that district. It appears, during the time the mine was in possession of the Bolanos Company, the returns were $1,500,000, and, after paying the mine costs and those of reduction, the net gain was $263,500. This has, no doubt, been expended on other mines, and in expenses which, however unnecessary they may be, are unavoidable under the present system of management. Had there been an efficient local superintendence, at an economical cost, the cumbrous and inefficient machinery of a London directory, with all its concomitant evils, would have been avoided, and the shareholders would not have seen their property pass from them, as a thing that had never been. Common prudence would seem to have dictated that, from so good a mine, sufficient capital should have been reserved to ward off for a little time any depreciation, as it is a well-known fact, that in Mexico mines that are rich to-day may be poor to-morrow; and, by another turn of Fortune's wheel, as quickly again prosperous.

In Mexican mines the poor ores, called the *colorados*, generally prevail to a depth of about 80 or 100 varas; below the *colorados*, but not unfrequently separated from them by 20 or 30 varas of unproductive mineral substance, are found the richer and more abundant classes of ores called *negros*, consisting of sulphurets of silver, &c. These ores generally extend some hundred varas in depth, and from them all the great riches, or *lonanzas*, of the Mexican mines, have been derived. Most of the English companies, on their first arrival in Mexico, selected old and deep mines, which were famous for their former wealth, and lavished their capital in the draining and clearing of property which had been abandoned by its former owners, on account of its exhaustion. A distrust, on this account, has crept on the public mind against embarking in mining speculations in Mexico. The mine of El Bote is comparatively a new mine, and would be a profitable investment at the present time, if it had not been cramped by less promising workings.

We have always advocated the propriety of investing capital in British mines in preference to those far distant; but, at the same time, we have thought it the height of folly, on a little reverse, to abandon properties without effort, where so much English gold had been sunk as in this instance. In the formation of the new company, it is, we believe, intended to give a preference to the Bolanos shareholders; and we trust that, under more favourable auspices and a new name, they will recover some of that capital which appears to be irretrievably sunk in the old company.

The Austrian Government, which, previous to its late exploits in Hungary, was only noted for its leaden and lethargic spirit of anti-progression, is about to make a stride which, if efficiently carried out, cannot but be of incalculable benefit to the heterogeneous empire. We allude to the reformation of the tariff, which at this time is exciting a great fermentation among all classes, from the protected manufacturer to the lawless smuggler. The committee who are to revise the tariff propose to regulate the import, export, and transit with foreign countries. They are to settle what portions of the dominions are to be seperated from the general system, and to determine its relations seperately. High protective duties are to be established, while the present system of prohibition is to be abolished. The amount of the protective duty is to be estimated according to the cost of the article produced by domestic and internal labour. Levying the duty *ad valorem* is not to be allowed. The export duty will be merely nominal, and all facilities will be given to exporters. The prohibition to export raw materials will be replaced by high export duties on those articles.

The system of differential duties, according to the diversity of wares or bottoms, is not to be allowed; in this step an approximation will be perceived to the liberal example set by the English Government in the abolition of the Navigation Laws. Weight is to be adopted as the standard of duty. A great quantity of necessary articles which are now taxed will be exempted from duty. Where special Austrian interests do not interfere, an approximation to the German Zollverein is to be attempted. Drawbacks are only to be allowed in extreme cases, but a scale of graduated duties according to the various articles, and facility of transport, will be levied. Exports duties on colonial wares, and all articles of undoubted foreign origin, are to be avoided. The draft of the tariff for iron wares, and all metallic goods, as well as for porcelain, earthenware, and glass wares, has been considered. The iron-smelters, it appears, are dissatisfied that unwrought iron is to be admitted at a duty of 50 per cent., which they say is not enough to protect them from competition with England. Iron, in Austria, costs about 3 florins per centner, while Glasgow iron can be obtained for 1 florin; and as iron may be brought for ballast without being charged as freight, they infer English iron may be put down in the Trieste market for half the price at which they can produce theirs, owing to the expensive cost of fuel. The commission, it appears, consulted a number of smiths, ironmongers, but no smelters—*hinc illæ lachrymæ*.

Some doubts are expressed whether the Hungarian line of custom-houses will be preserved; in that case reciprocal duties will be regulated. The system on which the modifications are to be based appears to be formed in a liberal spirit, and although there is no doubt that captious opposition will endeavour to retard their progress, it is certain that a free interchange of commodities between the several nations of which the empire of Austria is composed, will tend to soften much of that acerbity of spirit which has too often displayed itself in those sanguinary quarrels that have taken place between the several races subject to the Cæsar. We are not so enthusiastic as to imagine that a liberal policy will be pursued in all the states; if the reform is, however, only intended for the German dominions of Austria, we are convinced that a few years' experience will prove to the Government that it will be necessary to allow the other portions of the empire equally to participate in the benefits of a liberal tariff. The present enlightened Minister of the Interior has, no doubt, seen the necessity of making these reforms, as it is well known that in no country of Germany does smuggling exist so daring and audacious as in the domains of the house of Hapsburgh. In fact, smuggling in Austria has been nearly as well organised as the ramified nefariousness carried on by the Spanish contrabandistas.

In metallic industry, the Austrians, though good miners, have been the most backward of their Teutonic brethren; this has arisen, not from a want of capacity in the people, but from the narrow state of stupid selfishness in which they have been enthralled by a foolish and feeble Government. Hitherto, owing to prohibitions, a quantity of our manufactures could never enter the Austrian territories, while the most useful were taxed to such an enormous extent, that they were not available for the general demand. For domestic purposes, in many instances, utensils of metal could not be used on account of their cost; and, therefore, the importation of metals into Austria under a reduced tariff, cannot but be of vast importance to us, as we see in it another and a new field opened to British mining industry and enterprise.

MINING IN FRANCE.—The last accounts from St. Dizier state, that the iron trade is greatly improving, as there is now a better understanding between the iron and forgemasters, and the different railway companies, many of which had been obliged to suspend their works, and improvements, in consequence of the exhorbitant prices demanded by these monopolists for their material. This result will, hence, not only have a beneficial effect in inducing the companies to proceed, but, at the same time, give employment to a number of workmen, whose disaffection, in consequence of the approach of winter, might lead to very serious consequences to the mining interest. The reports from the coal basins of the Loire, Rive de Gier, &c., are also more favourable; and the strike which was feared would take place among the colliers will, no doubt, be avoided by the employment of a greater number, and at better wages—as the demand for coal is rapidly increasing, since the proprietors of these extensive works have agreed to make a reduction in prices—as the manufacturers where steam machinery is used, the gas companies, and the railway companies, had announced that they would import their coals from Belgium and England, sooner than submit to their monopoly. A great change will, no doubt, take place in the course of the ensuing year, by the proposed reduction in the import duties on iron, machinery, and coals, which will bring these gentlemen a little to their senses, and prove to them that there are as good, and even better, materials to be got elsewhere, and at a far lower rate.

MINING IN BELGIUM.—The iron forgemasters of Liege, Verviers, and other districts, have commenced working on a large scale, chiefly for railway demands. On the whole, the mining operations are greatly improving in Belgium, and there is a more cheering prospect for the iron, zinc, and coal proprietors, not only for home consumption, but for exportation. Several of the railways in progress, and which had been delayed being completed, in consequence of the scarcity of funds, will soon be opened, since the agreement entered into with the ironmasters to furnish rails, &c., on terms before mentioned.

FOREIGN INTELLIGENCE.

AMERICA.—The royal mail steamer, *Europa*, has brought news from New York to the 6th, and from Halifax to the 9th inst. The most important item of intelligence received by this opportunity is the apparent determination of the Government to support the alleged rights of the republic of Nicaragua to the Mosquito territory—such at least is the inference to be drawn from the public journals. The commercial advices by the *Europa* represent business generally as being less active throughout the States; but this was accounted for by the full trade drawing to a close. The emigration to California was rather on the increase than otherwise. From the various Atlantic ports no less than 578 vessels in all had sailed, and 106 more vessels were on the berths for the same destination. The great railroad convention at St. Louis had resolved in favour of the establishment of a railway with telegraphic lines from the old States to San Francisco as "worthy of the prompt action of the national legislature:" 8500 miles of railway, at a cost of $230,000,000, were already completed in various parts of the States, and 5000 miles more were contemplated. The total amount of cash duties received at the port of Philadelphia for the 10 months of the present year was $2,425,900, which is a trifle less than for the same periods of 1848 and 1847. The supply of coals at Philadelphia from the Schuylkill and Lehigh Mines during the 10 months of the present year, was 2,029,354 tons, being about 52,000 less than last year. The mail steamer *Teviot* had arrived at Mobile on the 27th ult., from Vera Cruz. She has on freight for this country about $450,000 value in specie, of which $116,000 are on account of the Mexican dividend. She had also 102 bales of cochineal on board. The dates by her from Mexico were to the 13th Oct. At New York, the Bowery Bank had declared a dividend of 4 per cent., the Eagle Fire Company a dividend of 10 per cent., and the National Fire Insurance Company a dividend of 7 per cent. The balance in the hands of the sub-treasurer was $3,641,140. The exports of specie from New York during the week were $354,962, making a total for the year of $4,001,436.

From the Mexican papers it appears that the company to whom the Mexican Government had granted the right of constructing a railroad across the Isthmus of Tehuantepec were proceeding as rapidly as possible with the preliminary arrangements. Before five years, the probability is there will be three connections between the Atlantic and Pacific Oceans—viz.: the Panama Railroad, the Tehuantepec Railroad, and the Ship Canal on the Nicaragua route.

ANOTHER GOLD REGION.—According to advices lately received from Bolivia it would appear very probable that another gold region has been discovered. The locality is stated to be in a part of the Andes, about seven days' journey from the city of La Paz, and the discovery was made by an Indian who was travelling with barks upon his back, and who happened to rest at a small stream, where he observed a little piece of gold, and from which he afterwards scraped up 14 lbs. weight in the course of a few hours. The governor of the district had since arrived at La Paz to consult with the Government as to the measures to be adopted for working the mines, and applications were pouring in from hundreds of people for licenses of plots of ground, according to the usual mining laws of the country. In the course of a few weeks nearly 3000 persons had left La Paz for the scene of operations.

SOUTH AUSTRALIA.—Adelaide journals have been received (overland) to the 28th August. At Glen Osmond, silver-lead smelting had been, and was still being, carried on to a great extent, the silver being separated from the baser metals, and the lead being manufacted for various domestic purposes, as well as for exportation. The great feature, however, in the mining interest, was the resumption of dividends by the Burra Burra, which had declared its eighth dividend of 100 per cent., or 5*l.* per share, payable on the 5th September last. The Adelaide railway companies having amalgamated, operations have commenced by a call on Aug. 17 on the shareholders. The Bill for the railway was before the Legislative Council, which proposes to allow 8 per cent. on deposits.

Letters from Sydney to the 6th August, mention that a vessel had returned from California with a considerable quantity of gold-dust, after having sold her cargo there with advantage. It was calculated that nearly 100,000*l.* worth of Californian gold would be received in, and exported from Sydney, before the end of the current year.

The Singapore papers of the 7th October mention the arrival there of coal waggons, rails, and other stores for the coal-workings of the Eastern Archipelago Company at Labuan. The company have obtained Lord Grey's permission to name the shipping port for their coals on the north-east end of the Island of Labuan, "Port Raffles," in honour of the late Sir Stamford Raffles, the pioneer of civilization and freedom of commerce in the far East.

The German naturalist, Van Sommer, has brought to the notice of the Java Government the existence of a rich mine of copper, called "green carbonate," in the island of Timor, in the district of Thilarong.

Letters from Belgium state that Banca tin continued in demand at 41½ f., but holders were unwilling to part with any under 42 f.

A letter from Montpellier states that a silver mine has been discovered in the department of the Herault, which produces fine silver of the value of 88 fr. from 200 lbs. weight of ore.

THE FRENCH POST-OFFICE CONTRACT FOR COALS.—The contract for supplying the French post-office department with 21,300,000 kils. of Cardiff rock coals, and other sorts, for the service of the mail steam-packets, announced to be adjudicated on the 29th ult., not having been completed, in consequence of some informalities, and the alteration on the part of the Government as to the time and quantities to be delivered at the undermentioned packet stations, a new competition for the contract took place on Saturday last, the 16th instant, when the following were the successful competitors:—M. Farlent for Calais, and M. Vincent for Marseilles, Ajaccio, and Bastia; Messrs. Fry and Davidson, of London, for Malta; and Messrs. Chapman and Co. for Athens, Constantinople and Alexandria. As we have stated before, the greatest jealousy exists on the part of the French contractors against the adoption of British coals for the use of the mail steam-packets and steam navy of France, in preference to their own produce; it is no easy task, therefore, for the English contractors to be successful, as there are many now in office who throw every opposition in the way, to favour their *protegés*; but great praise is due to the present Government for its impartiality, and its desire to promote, as far as possible, the free trade or competition, not only for the mineral and metallic productions of this country, machinery, &c., but to make those alterations in the tariff duties, which will cause a greater intercourse between two of the most influential and commercial nations of the globe. The following are the deliveries to be made:—At Calais, from the 1st January, 1850, to 31st October, 100,000 kils. monthly—total 900,000; at Marseilles, from January 1 to May 31; 2,500,000, Ajaccio and Bastia 150,000 each in January; Malta from January to May, 2,500,000; Athens in January and February, 300,000; Constantinople, January, February, and March, 000,000; Alexandria, January, February, and April, 800,000—total, 7,900,000 kils. of Cardiff coals; the other sorts are from the coal basins of France and Belgium.

THE SPANISH QUICKSILVER MINES.—By a royal order, of the 10th inst., the contract for the sale of the product of the quicksilver mines, as referred to in our Journal of the 10th inst., was approved of; and, in consequence thereof, the following instructions are given:—There shall only be extracted from the mines 12,000 quintals of quicksilver in each of the four years that the contract has to last, taking into account what is produced by the mines worked by private persons, unless the contractor should claim a greater quantity before the 1st of August. For the payment of the 33,500 quintals which belong to the Government, and which are in the warehouses of Messrs. Rothschild and Sons, and Baring Brothers, and Co., of London, a payment which the contractor must make within a month from the signing of the approval of the contract, the rate of exchange shall be 85 the 1*l.* sterling. The adjudication of the contract shall be in favour of the tender that shall exceed the type fixed by the council of ministers. If the deposit required for the 13th condition of the contract be made in hard cash, the depositor will be paid by the deposit being rebated from the value of the last delivery of the quicksilver existing in London; and if the deposit be in paper of the consolidated debt, it will be returned on payment of the same quicksilver.

MINING PRODUCE OF BOHEMIA.—During the year 1848, the public and private mines of Bohemia produced, in addition to other minerals and metal, 38,388 marks of silver, 16,539 centners of lead ore, 19,140 centners of litharge, 2134 centners of pig lead, and 489,688 centners of iron.

THE KAW-AW MINES, NEW ZEALAND.—We are glad to hear that the smelting-works are now in active operation, and we very shortly may expect to see the produce of our copper mines taking the chief place in our list of exports. The ore has hitherto been broken up by the tedious process of hand labour—but a crushing apparatus is now, we hear, in course of erection. The machinery is to be driven by water power, and as it is derived in a novel and highly ingenious manner, it may be interesting, if not useful, to give some description of it. A steam-engine is used for the purpose of pumping the water out of the shafts from which the various levels proceed where there is no work. Instead of adopting the usual method of raising the water in the shafts to the high-water mark only, and running it off by a channel at this elevation, the water is raised about 18 feet above this level, and is then allowed to descend upon the water-wheel, which is to drive the crushing apparatus. Should this ingenious and original method succeed, it is likely that a patent will be applied for to protect the discovery. It is only to be regretted that this invaluable coalition of steam and water power has been so long unknown to the scientific world, as by this discovery it is confidently expected that the present steam engine of 12-horse power will be made to do the work of a 24-horse engine. The poor engine is at present unable to raise to the sea level even half the water in the shafts, so that it becomes the greater wonder how it should be able to achieve such extraordinary results by merely throwing the water up an extra 18 feet, and then allowing it to fall pump on the water-wheel. But this is an age of wonders!!—*Southern Cross, Auckland, July 6.*

SIGNALISING ON RAILWAYS.

[Abstract of specification of patent granted to Francis Edward Colegrave, of Brighton, gentleman, for improvements in the means of communicating between the passengers and guard of a railway train, or between the guard and engine-driver—parts of which improvements are also applicable to working signals on railways. Enrolled 22d Nov., 1849.]

This invention adds another to the list of schemes for signalising on railways; but it is rather puzzling to discover any great originality in the present patent, unless, indeed, it be as regards its application to station signals. The first part of the invention relates to a mechanical arrangement, by which an *audible* signal may be given, or alarum sounded, by the passenger, in order to attract the attention of the guard. The second part relates to giving a *visible* signal to the guard, indicating the particular carriage from which the audible signal has been previously given, so that he may, without stopping the train, resort to that carriage, and take measures according to circumstances. The apparatus exhibited for these purposes are applicable, suitably modified, as station signals. The third part relates to certain arrangements by which the engine-driver may signalise the guard when necessary. Under the first part, the patentee describes and exemplifies an apparatus, which consists of a small gong, provided with a striker, which is fixed on top of a peculiarly formed vertical rod; in connection with the cranked parts of which there are several studs, placed at right angles thereto, on the face of a pinion—the spindle of which carries another pinion at the opposite extremity, into which gears a toothed wheel, whose spindle carries at the other extremity a rigger wheel, over which passes an endless cord. This apparatus is inclosed in a suitable case, fixed on the top of the carriage; the endless cord passing to another rigger wheel below, to which a winch handle is attached. Upon the passenger turning this, the endless cord will set the above machinery in motion, and produce a succession of taps upon the gong—the number of which admits of regulation.

This apparatus may be applied as a station bell, either for small stations, by having a small gong, with similar mechanism, except that the handle acts upon the wheel-work direct, instead of through the medium of the endless cord, fixed upon a suitable standard, within reach of the attendant, or for large ones, by fixing the apparatus between two tall columns.

Under the second head, the patentee describes an arrangement, consisting of a lamp, placed within a sheath, or case, open at top—this lamp having cords, or chains, attached, which are secured at the other end, to counterbalance weights; a suitable casing surrounds all, and secures it outside the carriage to the top of the roof. At ordinary times the lamp is kept within the sheath by a spring, which takes into a recess, formed in a casing inside the carriage. A cord is attached to this spring, by pulling which the spring is released from the recess, which allows the counterbalance weights to act, and raise up the lamp, presenting a *visible* signal to the guard. The lamp may be brought within the sheath again, by turning a winch handle. This apparatus is adapted for a station bell, by having two hollow pillars, containing the counterbalance weights, the lamp being placed between. Under the third part is described an apparatus, by which the guard may communicate with the engine-driver. It consists of a flexible tube, made in lengths, screwed together, which extends the whole length of the train. To this is attached a flexible air-bag, or bellows; by the guard compressing which the air will be propelled through the tube, and pass into the whistle, fixed at the other end, close to the engine-driver, signalising him to stop the train.

Having described the invention, the patentee states his claims, which are to the effect, that he reserves to himself the exclusive use of the several apparatus shown and described, or any mere mechanical equivalent.

Patent-office and Designs Registry, 210, Strand, Nov. 26.

BRANDT'S IMPROVED RAILWAY CARRIAGE BEARINGS.—We have had an opportunity during the week of inspecting a model of a railway carriage constructed with Brandt's patent bearings, and testing it by actual experiment against one mounted in the usual manner. The patent bearing consists of a pair of friction-wheels, so fixed in the axle-box, above the axle, that the periphery of one is nearly in contact with the shaft of the other; and the whole weight of the carriage is supported on the journal by the angular space formed by the friction-wheels, which, of course, revolve as the wheels are propelled, and cause a great saving in the power employed. The railway is about 6 ft. in length, having a set of pulleys at one end, over which is placed a cord, having a small weight attached of about 4 ozs. On linking the cord to the carriage with the simple hollow or rigid axle-box, and the weight left free to descend, it is found that 26 lbs. weight is the maximum load which it can put in motion; but on attaching it to a carriage, constructed precisely similar, but having the anti-friction bearings, it draws with facility 80 lbs., clearly giving an advantage of considerably above 60 per cent. in reducing friction. A most important object with railway companies at the present moment is the reduction to a minimum rate of the cost of propulsion; and the patentee estimates that, on carrying out his plan in practice, the following profitable results would ensue. If 80 tons can be brought to London from the midland counties by a certain amount of fuel expended, and in a given time, by the present mode of construction, 200 tons could be transmitted with the alteration his patent suggests by the same engine power, and in the same time. An engine, which on the present plan is capable of drawing 20 carriages, would, with his bearings, draw 40 similarly laden; thus enabling the lines to convey passengers and luggage at one-half the present cost—one journey accomplishing the returns of two; while he calculates a saving also to a very considerable amount from the better distribution of weight on the rails, and, consequently, less wear and tear, and a less consumption of grease. By it also is secured a steady action at high velocities, and without danger arising from heated axles.

EMPLOYMENT OF WOMEN ON RAILWAYS—THE BOULOGNE AND AMIENS.—The cost of the construction of this line was 1,500,000*l.* for 77 miles, being 19,500*l.* per mile. As regarded the working the line, estimating the number of trains at 10 per day, and the distance travelled at 20,000 miles per month, the expenses amounted to 3s. 11d. per mile, or 4000*l.* a month. The cost of the maintenance of the line was 100*l.* per mile per annum. There were as many as 105 level crossings on the line, and the cost of these in wages to those who had charge of them, amounted to 4300*l.* a year; but the directors are now endeavouring to reduce this item, by having the crossings *kept by women*, whose salaries will be fixed at a reduced rate. The cost of the traction was 1s. 7d. per mile, the price of coke being much higher in France than in England, and the consumption of that commodity amounted to 20 lbs. per mile. The speed of the trains is estimated thus: 77 miles in three hours, the stoppages being about ten.

TOLL PAYABLE UPON COAL AT SWANSEA.—In the Court of Exchequer, on Monday last, the cause, the Duke of Beaufort *v.* Smith, was decided for the plaintiff. The noble plaintiff, as lord of the manor of Kilby, in Carmarthenshire, claimed to be entitled, by way of royalty, to an ancient customary payment of the sum of 4d. for every "way" of coals wrought in the manor, and shipped across the bar of Swansea. Amongst other documents adduced and referred to in support of the duke's title, was a survey of the manor made in the year 1650. It appeared that when Oliver Cromwell was generalissimo of the Parliamentary army, and before he became Protector, the Parliament granted him the manor in question, and the survey was made at his instance. It was stated, by the commissioners under this survey, that the lord of the manor of Kilby was entitled to the customary payment of 4d. for every "way" of coals wrought in the manor; and one of the questions now raised for the opinion of the court was, whether the document in question was admissible in evidence, to show that by reputation the lord of the manor was entitled. On the part of the defendant, it was insisted that this survey having been made at the instance of a private individual, was not to be considered in the nature of a public document, and was not entitled to the same weight or authority as if it had been made upon the direction of the Sovereign, or the Government of the country *de facto*. It also appeared that in the year 1664, the then possessor of the manor, in a lease which he then executed, expressly reserved to himself the specific payment of 4d. a "way," now claimed; and it was alleged that this claim had been uniformly and continuously admitted by payment, until about 20 years ago, when the disputes arose which occasioned the present litigation. It was contended, however, on the part of the defendant, that the evidence, taken altogether, did not establish that immemorial usage upon which the plaintiff founded his claim, and was bound in law to rely.—Mr. Montagu Smith argued the case on behalf of the plaintiff; and Mr. Aspland for the defendant.—The Court was unanimously of opinion that the plaintiff had established his claim, and was entitled to judgment. It might be conceded, that the survey made under the direction of Oliver Cromwell, relative to his private property, was not a public document; but there was abundant evidence, without the survey, to show that this was an ancient claim, long acquiesced in, and supported by enjoyment during the times of living memory. The lease of 1664 was very strong in support of the plaintiff's claim, but it did not rest solely upon this, whilst the proof on the other side was merely of a negative character. On the whole, the Court was satisfied that the plaintiff had made out his claim to 4d. for every "way" of coals wrought within his manor, and shipped over Swansea Bar.

Original Correspondence.

ON THE LAW WHICH REGULATES MATTER.

SIR,—The excess (electively acting at all sensible distances, according to the law of gravity) moves with the revolution of the earth on its axis; and the tidal wave, which is constantly replenishing it with friction, incessantly disturbs the equilibrium, and, at the same time, forces it, as it were, through the stratification of the earth, where it effects, with other energies it gives rise to, the repletion and formation of the contents of mineral veins, volcanic eruptions, &c., and also regulates the formation of the deposits taking place. This principle may be observed in the sand banks of estuaries, bays, channels, and also in the ebbing and flowing wells of fresh water, in all parts of the globe. As the tide flows the wells ebb, and as the tide ebbs the wells flow, thus clearly showing how the electricity is absorbed, and the denudation of the land undergoing elevation, as clearly showing how it is again dissipated, or evolved—that being in points in the earth's curvature where the outer particles are just balanced by the central mass, so that the excess is swept off at a tangent towards the formation of the next system, or series of deposits, in the ascending scale. Hence the elevations and depressions of the earth resemble, in some degree, a pair of weighing scales, evenly suspended, set in motion, and after a series of elevations and depressions above and below the plane of suspension to return to the same level, with this exception, that the continual action of the tidal wave, the balancing power, or regulator of the movements, tends to maintain a maximum of elevation in the line of the equator. It will now appear evident that each successive system, or series of stratification, and, consequently, each atom of which they are constituted, from the granite forward, possesed or possesses its own atmosphere (electricity) of density, governed by the pressure they have been separately and collectively subjected to in undergoing depression and elevation, and that each taken as a mass is lighter, and composed of a multiple of the next preceding, as well as a proportion of the others. For an approximate illustration take granite as 1; gneiss and mica schist, 2; Silurian, 3; old red, 4; coal measures, 5; new red, &c., 6; oolite, 7; and tertiary, 8. Here, then, we have 1 to 8 and 8 to 1. It might be, probably, observed, that granite is not a prime number, it being comprised of three or more constituents, which are devisable into component parts, or elements. It is, however, as much a prime number of the constituents reposing upon it, as water may be supposed to be a prime number of the gases emanating or surrounding that body. Water consists of one oxygen and two hydrogen, and stands thus—1 to 8 and 8 to 1, or 1 to 16 and 16 to 1. If we reduce the increasing constituents of the strata composing the crust of the earth to their smallest value of density, or greatest value of combination—in other words, to the level of the sea—they would stand thus: 1 to 16 and 16 to 1; consequently, a further combination, or admixture, without some corresponding or compensating change, would render them lighter than water, into which they would readily pass. The waters of the ocean, or the tidal wave, seems, therefore, to occupy an intermediate position between the solid and the gaseous, and is also the agent from whence the friction emanates, by which the electric charge is constantly supplied, or its equilibrium incessantly disturbed, and rendered perpetually active in its operations, in chemically and mechanically arranging and regulating the constituents of the deposits forming, &c. Each successive phase of which giving, in accordance with its position in the points of the circumference curves, a different atmosphere of density, and the equation of its, or their, surface or surfaces (centre of gravity above the level of the sea), becoming the mathematical expression of the constituents which have entered into their composition, heat and light effecting an excess (electricity acting at all sensible distances, in accordance with the law of gravity) within points in the earth's curvature, where the outer particles are balanced by the central mass; and as the outer layer is forced beyond the points in the curves, the excess radiates, or is swept off at a tangent towards the formation of the next. The principle is this—"Suppose matter to consist of two sorts of particles, or two sorts of centres of force, of different orders of density; and if the particles of each order repel their own particles, according to a given law, but attract particles of the other kind, according to another law, then if we conceive only one particle of the denser kind to exist, and an infinite number of the other kind, that single particle will become the centre of a system, surrounded by all the others, which will form around it an atmosphere denser near the central body. If we conceive a stream of particles similar to those forming the atmosphere to infringe upon it, so as just to overcome its resistance, they will, whilst continually producing undulations throughout its whole extent, gradually increase its magnitude, until it attains such a size, that the repulsion of the particles at its outer surface is just balanced by the attraction of the central particle. If the stream continue after this point is reached, the whole outer layer will be pressed beyond the limit of attraction, and will fly off at right angles to the surface, which might then be said to radiate."—*Babbage's Bridgewater Treatise.*

It is unnecessary for us in this case to follow Mr. Babbage through all the conditions of the law; we shall, therefore, pass on to the summing up. "It seems more probable that matter consists of three kinds. Suppose each kind to repel its own particles, and supposing the central atom, whilst it repels similar particles, to attract those of the two other kinds, and, moreover, that these latter were either repulsive, or indifferent, to each other. We might then conceive matter to be made up of particles, each having a central point, with an atmosphere surrounding it, and this atmosphere again enclosed within another, and a larger one. Under such circumstances, the outer atmosphere might give rise to heat and light, to solidity and fluidity, and the gaseous conditions to capillarity, to elasticity, tenacity, and malleability. The more intimate union of the central atoms, by which two or more become enclosed in one common atmosphere of the second kind, might represent chemical combinations, and, perhaps, that atmosphere itself be *electricity*. Possibly, also, this intermediate atmosphere, acted on by the pressure of the external one, and by the attraction of the central atom, might take the liquid form. These binary or multiple combinations of the original atoms, and their smaller atmospheres, would still be enclosed in an atmosphere of the outer kind, which might be nearly spherical. The joint action of the three might, at sensible distances, produce gravity."

It is unnecessary for us, in this instance, to enter into an explanation of how ice passes into water, and into the gaseous condition, and back into water and ice again. We shall, therefore, pass the subject over, and merely observe that there are lines in and surrounding the earth, where matter tends to assume a crystaline condition. The line surrounding the earth is approximately represented by the line of perpetual snow, but the interior line is indefinable in the present condition of the earth, as the continual action or pressure of the tidal wave incessantly disturbs the equilibrium, and as incessantly sets the internal elements in operation on the mass, by which volcanic eruptions, &c., are effected; so that what is termed the line of invariable temperature might have had an existence before the ocean wave commenced to roll its impetuous billow; but, in the present state of things, is constantly annihilated; nevertheless, we can assume one. Our earth is, consequently, separated into three zones—a negative, between two positive zones. The negative, being the grand workshop of formation, and re-formation, and embracing a maximum perpendicular depth of about 69,000 feet, or about half the difference between the polar and equatorial diameter of the earth, the mean of which, 34,500 feet, being the value; and the energies, giving rise to the effects, emanating from the sun, and the tidal wave. The condition of these zones may be likened to a man placed at one of the poles, with his toes and finger-ends frost-bitten, at the same time; unless there were some compensating means of keeping up the circulation of the blood, by the introduction of a stimulant from without, the body would soon pass into a crystallised mass, corresponding with that surrounding it. Let us, in the next place, imagine the sun's rays to be shut out from the earth by an impenetrable mist, the consequence of such a condition would inevitably result in the crystallisation of the ocean, and no interior effects, not even the friction of the tidal wave, could prevent the change, any more than the volcanic powers of Erebus, in the Antartic circle, can prevent the snow from consolidating around its fiery aperture.

Finally, we shall endeavour to show the point of essential difference between the conditions of the law of matter, as laid down by Mr. Babbage, and our earth, as at present constituted, in connection with what we have advanced. It is this—that the *excess* of the intermediate atmosphere (*electrosphere*), where the more intimate union of the central atoms ensued, by which they become enclosed in one common atmosphere, was, at the close of the crystalline aggregate, or as the granite assumed its consolidated form, converted by the joint influence of the attraction of the central mass, and the pressure of the outer atmosphere, into water, which, at the same time, commenced, in combination with the force emanating from the sun

to fulfil the same condition as before, in the formation and re-formation of the stratified deposits. Light and friction, effecting an excess, electricity, equivalent to gravity within, points in the circumference curves of the earth, where the constituents of the outer layers of each successive phase, or system of deposits, are balanced by the attraction of the central mass; and the tidal wave might not be inaptly compared, in its operations, to the heart of the body, the grand forcing pump, or hydrostatic press, which regulates the whole.—F. M.: *Neath, November* 20.

SAFETY FUSE.

Sir,—I see in your last Number a letter from a "Spectator" on this subject. I agree with him that the subject is of great importance, and that the attention of managers of mines, &c., should at once be directed to it. I have heard frequently, within the last few months, that the article called *safety fuse*, manufactured in the neighbourhood of Camborne, and sold at a reduced price, is of bad quality, and that large quantities of it have been returned to the manufacturers. I have also heard that many of the miners, in mines where this article is used, have gone privately and purchased of the patentees. The fuse sold by the first-mentioned manufacturers has been repeatedly advertised in your columns, and certified by the agents of several large mines; but I have been informed that several of those agents, finding that the fuse has proved to be of an inferior quality, have expressed regret that their signatures were appended to the testimonial. How far these statements are correct I know not, but I mention them that the parties concerned may, if they can, give a public contradiction thereto. I wish all parties to have "fair play." If Messrs. Bickford and Co. can manufacture *as good* an article at 3d. as the patentees can do at 4d. per piece, then it would be for the interest of the adventurers in mines to buy of them until the original manufacturers reduce their price to the same level; but if, as is alleged, Messrs. Bickford and Co. put in an inferior article, no *favouritism* should tolerate its introduction to any mine, or elsewhere. I wish to have the matter discussed in your columns, and it is with that view that I request the favour of the insertion of this note in your Journal. I have no selfish object to serve herein: if it be true that an increase of 7 per cent. on deaths arising from explosions has taken place since the patent expired, I should like to have the cause explained.

Truro, Nov. 19.

COPPER SHEATHING.

Sir,—I cannot see my way clear to continue this discussion any further, as we are only filling up your paper with questions that do not appear to me will arrive to any practical result. From my own certain knowledge, Mr. Prideaux has had an excellent opportunity at Messrs. Vivian's, Hafod Copper-Works, at Swansea, for some considerable time, to acquire a thorough knowledge of all the practical smelting processes. He has also, for the last two years, by inquiries through your valuable paper, and, no doubt, through other channels, had an opportunity of gaining more information on this subject than rarely falls to the share of any individual; and where, or at what point of knowledge, does he appear to have arrived? I find him, in your paper of the 17th inst., seeking a *little* information on the first process—that of calcination; notwithstanding, if I thought there was the least chance of assisting him through the different stages, without being rebuked for my pains, I would gladly do so. In my letter of the 13th Sept., I distinctly stated, that "where we had native copper of 90 per cent., we mixed it with the metal in the 7th process." Mr. Prideaux, in his letter of the 25th September, in alluding to mine, states—"And next for his straightforward replies to the question on ores;" and then goes on to say—"I cannot, however, help doubting (with all deference to practical men) the safety of putting in any ores with its concomitants, so far forward as the 6th (not to mention the 7th) process." I thought I had a right, therefore, under the circumstances, to interrogate him as to the best mode of treating those ores; but I have hitherto received no direct answer, or at least no answer to justify me in supposing that he can be at all sincere in this discussion. I find that in his letter of 23d Oct., he states that "clean native copper, then, I would continue to put in the 7th process," and that those ores (as far as he knew) contained but a small proportion of alloy—so small, as not "likely to impair the mechanical texture of a large pool of copper." Now, this corresponds with mine of the 13th Sept., but is in direct opposition to his of the 25th Sept. Viewing, then, these strange prevarications, I must pronounce Mr. Prideaux's sincerity as being paradoxical. If I take the wrong view of this case, I am open to correction, either by yourself, "T. H. S.," "Germanicus," or any other gentleman, who has taken part in the discussion.

November 22. A Roaster Man.

MINING SPECULATION—HOME AND FOREIGN.

Sir,—In your Journal of the 3d inst., under this head, a letter appeared from a correspondent, signed "Anglo-Celt." The purport of this communication was to ridicule the investment of capital in foreign mines, and recommend it to be embarked in our home mineral deposits, more especially those in the sister country. Although I perfectly agree with him that capital might be more profitably invested in England than abroad, I cannot coincide with him in the sweeping condemnation, that the money which has been expended on foreign mines has, in every instance, been wastefully and unnecessarily thrown away. He states—"If you ask a capitalist, in England, to embark in the most promising undertaking in Ireland, no matter how good, he gives such a look as if you had kicked him in a nameless place; the very name of an Irish speculation acts like a scarecrow. What then can be the cause of such blind and ridiculous prejudice? The people are neither cannibals nor savages; but, on the contrary, they are generally speaking the most patient peaceable people on the earth." The mineral deposits of Ireland are, I am well aware, if properly developed, capable of giving employment to thousands of her starving children. The *blind and ridiculous prejudice* which has deterred capitalists from embarking their capital in that distracted priest-ridden country is the general insecurity of life and property, the unceasing agitation, the secret combinations, the base ingratitude, and hatred against everything that is English. I am not here about to enter into a political discussion; but "Anglo-Celt" must have resided in Ireland to little purpose had he not discovered, long ere this, the truth of what I have asserted; and I fearlessly say, that life and limb are less secure in some districts there than in any part of Spain or Mexico during their most lawless periods. Let Irish landlords and capitalists do their duty by commencing the development of their own resources, and British capital will soon follow; they who would receive assistance must first endeavour to help themselves, and not trust, as has hitherto been the case, to British alms and aid.

Many of the foreign mines were taken up in the bubble year, 1825, and were abandoned as soon as the interests of the projectors were served. Though many of them at present do not appear so valuable as the paid-up capital states, I by no means consider it a fair criterion that their intrinsic value should be judged by the price at which shares are quoted, as, by a parity of reasoning, those mines which are quoted at enormously high premiums could be reckoned to be of the value of all the shares realised. We are well aware that a slight demand for any particular stock raises its value, and as that demand increases, so does the price of the stock. In many instances, this occurs through fictitious transactions—*vulgo*, jobbing. We have lately seen, in the railway world, how shares could be raised and depressed by nefarious management, while the plant was in *statu quo*. Mines are probably subject to more fluctuations than any other kind of stock, and the value of shares must always depend upon the state of the market, which re-acts partially on the mine as a property, though without enhancing or depreciating it according to the variation of shares. The first mine which your correspondent cites is the Alten, with a capital of 72,500*l.* paid-up, and 12,500*l.* present value. As I happened to be some years in the service of that company, I am perfectly acquainted with the value of the property which "Anglo-Celt" values from the share list at the above amount. As an erroneous impression might be caused by his letter, I shall, with your permission, give a brief summary of the Alten property, and leave your readers to judge of its *real* value. The grant of the land on which the mines are situated is about four miles square, and held *in perpetuo*, without any royalty from the Crown. The mines are at present returning about 16 tons of fine copper per month; the number of them, with their produce, appears monthly in your Journal. In addition to the manager's residence, a mansion, with counting-house and domestic offices attached, there are substantial dwellings for the agents, and upwards of 100 cottages for the labourers, several large storehouses, material houses, brewery, bakehouse—in fact, conveniences for a population of over 1000 inhabitants; three miles of substantial tram-road, ore shutes, coke ovens, grinder, dressing-machine, 24-head stamps, launders which convey the water about two English miles, steam-engine, smelting-works, 220 ft. long and 80 ft. broad, containing six reverberatory and two blast furnaces; the refinery, plated with iron, and roofed with zinc, together with wharves and every convenience for unloading and loading vessels. To these must be added the horses, live stock, furniture, and all belonging to the company, which would there realise more than their full value. On this property there is likewise about 10 English miles of carriage road constructed by the company, and which would bear competition with any in England. If it were required, I could give a valuation of every separate item; but I do not consider this necessary. The next company alluded to—the Asturian, as being valued at 37,500*l.*—I am not so well acquainted with; but having been on the spot, without hesitation, I can pronounce it one of the finest properties in Europe, and, if properly managed, would give ample returns, to its shareholders; and in this opinion I am borne out by several of your practical correspondents. The value of the other mines quoted by "Anglo-Celt," I have no doubt, could, if necessary, be ascertained, and their real value placed in juxta-position with their nominal. Situated at some distance, as they generally are, from the direction and shareholders, much must depend on the confidence placed in the chief agent. On his reports are based the calculations of the value of the mine, shareholders not being able to see for themselves; and shares are exalted or depressed according to the tone of his communications.

I willingly admit they cannot be so easily controlled as our home mines, and I consider the latter a more legitimate and profitable way of employing British capital, which I should wish to see further extended in that direction; and I trust that Ireland will participate in these advantages, though how soon must mainly depend on her own exertions and good behaviour. Although I have visited a vast number of foreign mines on the continent of Europe; I am by no means an admirer of the mode in which they are conducted, or an advocate for the employment of British capital in them, nor should I have stood forward in their defence if I had not been

London, Nov. 13. A Lover of Fair Play.

THE MANUFACTURE OF IRON.

Sir,—I am glad that I have at length provoked the discussion of a subject to which my attention has been long devoted; but I would rather have had almost any one else for an opponent than Mr. David Mushet. I trust, however, that the discussion will be conducted in good feeling—the desire on both sides being to elicit the true state of the case. In the first place, I beg to observe that all the actual argument brought forward by Mr. David Mushet, in his letter of the 13th instant, is decidedly in favour of my strange theory on the constitution of bar-iron. Mr. Mushet admits the presence of laminæ and fibres in finished bar-iron; but could such exist there if the whole of the metal in the bar was in the same state? It appears to me quite evident, that for such a result two different or distinct bodies must have been wrought together. If the iron was altogether in the same uniform state, a bar, when cut, slit, or torn, would exhibit a smooth, homogeneous fracture, like lead or copper, or like best boiler-plate, to which Mr. Mushet refers, comparing its cut to that of lead. I regard good boiler-plate as next in point of purity to tin-plate iron, considering the latter as the nearest approximation to the pure metal which is prepared in the manufacture; but draw some of this out into a bar, and sell it to a blacksmith to work up into some small article, he would call it rubbish, and say he could not work such stuff. This is what I consider a paradox. In tin-plate iron, the cinder has been all worked out. During the operation of forging such iron, it is kept continually at a very high heat, sufficient to keep the cinder in fusion. For hours the iron is exposed alternately to the hammer, or to the heat of a hollow fire. In the latter, a quantity of cinder, and what is termed morsel iron, is found. The latter is evidently cinder reduced to the metallic state by contact of highly ignited carbon (the coke of the hollow fire) while out of the range of the blast. By this mode of operation, the cinder is completely worked out of tin-plate iron; but in the preparation of bar-iron, I contend that the cinder is thoroughly worked in. Pig-iron does not contain enough of the elements of cinder for immediate use in the puddling-furnace, on which account it is passed through the refinery, that it may absorb oxygen and carbon. This is a very different view of the case, as to the object of refining metal, to that which is generally received. I state this, as well as some other opinions, possibly original, connected with the treatment and properties of iron, from a desire to have them established or refuted. In the puddling-furnace, the iron separates into two distinct states—the pure metal and cinder; an important compound of iron. On this taking place, pure iron being less fusible than pig-iron or cinder, a ball is gathered up by the workmen, consisting of a mass of pure iron in a porous state, which may be compared to a sponge, having the pores filled with melted cinder, a portion of which is at first worked out; but the temperature of the mass rapidly sinking, the cinder passes into a soft, pliable, but very adhesive, state, and thus becomes worked into the bar. There can be no doubt but that the repetition of operations of heating, drawing out, cutting up, and piling, has been found to have a beneficial effect upon the quality of bar-iron; and the received opinion is, that this arises from the working out of impurities. My notion is, that the benefit should be attributed to the more intimate admixture of the two bodies—pure iron and cinder. Take an analysis of pig-iron, and compare the small proportion of foreign matter present with the amount of what is termed impurity from the refinery and the forge, not omitting that which still remains in the finished bar, and we have another paradox. In order that I may elucidate more fully the view I have taken of the constitution of bar-iron, I must assume a point or two, and state a case. I had an opportunity of watching closely the operation of puddling, where a considerable quantity of rich red ore and carbonaceous matter was used with pig-iron. The cinder appeared extremely rich in iron, being nearly as weighty. I could not get an analysis of it; but took an account of the iron and ore charged to the furnace, and of the iron and cinder produced from it. The result was, that I estimated the cinder to contain 87½ per cent. of iron. I will assume this as the proportion of iron in puddling-furnace cinder; and, further, that bar-iron consists of four-fifths pure metal, and one-fifth of cinder. This would give by analysis 97½ per cent. of iron in the bar; and it would be concluded that all this 97½ per cent. of iron existed in one uniform state. But I argue that it does not; that 80 per cent. is in the form of the simple metal as fibres, mixed with 17½ per cent. of iron chemically, combined with 2½ per cent. of oxygen and carbon. I have much more to say on the subject of cinder; but, anticipating that I shall be called upon to make a rejoinder, I must keep a few arguments in reserve.

Nov. 20. T. H. Leighton.

Mr. MITCHELL ON THE MANUFACTURE OF IRON.

Sir,—As I consider Mr. Mitchell's inquiries into the chemical agencies of this process very valuable and deserving attention, it is the more necessary to correct some considerable practical errors in his last paper—indeed, I am at a loss where he could have derived information so much at variance with the facts as are contained in the paragraph upon blast. I have thought it probable the allusion to *denser fuels* being used with hot air, and the *lower temperature* of the upper part of the furnace, might have reference to some accounts of the use of anthracite coal; but this material is so lately brought into use, its peculiarities and properties so imperfectly understood, and probably so inadequately developed, and so little is known of its smelting effects with cold-blast, that it cannot justly be brought into any comparison of the effects of cold and heated air. With regard to known and tried fuels, the general rule is the reverse of that Mr. Mitchell gives. *Cold blast* requires the *denser coke*; and not only can light fuels be used with hot air, to which cold cannot so successfully be applied, but generally it is held that such fuels, raw coal inclusive, are more suitable for hot-blast than the other. The reason is obvious; cold air having more weight, and the oxygen more concentrated, needs a denser coke, in order to resist *destructive* combustion. To produce the necessary heat, with the smallest amount of *destructive* combustion, is the problem of successful smelting. Amongst the numerous aspects in which the complex operations of the blast-furnace can be viewed, none is more important than the *mechanical*. The cokes in the hearth of the blast-furnace are to be regarded as constituting a *filter*. The liquified matters have to filter through the interstices of this mass of coke; and it is also the filter itself which has to generate the melting heat requisite for the infiltration. The more, therefore, this heat is diffused over the whole surface of the filtering material, and the interstices kept open, the more successful will be the result; but it is evident if the coke has a weak body, compared to the density of the oxygen, it will be utterly destroyed within the small range where the blast first impinges. On the contrary, if the fuel is so strong that the carbon is merely taken from the outer surface of each mass, the heat of combustion will not only be spread over a larger cubical content of the hearth, but, what is of great importance, the mechanical form and position of each mass composing the filter will be much longer retained. Thus it is that *large cokes* make most iron; therefore, as hot-blast effects a *less concentrated destruction* than cold, we see at once why lighter fuels may be applied, and why it so greatly economises the fuel.

I am not certain whether in the next passage Mr. Mitchell means to imply that the heat of the upper part of a hot-air furnace is in fact less than a cold blast-furnace, or merely that it *would be so*, were the temperature in the hearth the same; but the former appears to be implied, as he proceeds to the inference "that a hot blast-furnace is more difficult to manage, requires more careful attention, and the yield appears more variable in quality," than which nothing can be stated more opposite to the fact. By the use of hot air, the heat of the furnace from top to bottom is carried so far above the bare average temperature required for each successive process, that the difficulties of management are in the greatest measure done away with. Under the old cold-blast system, the most careful attention was required on altering the burden of the furnace; 14 lbs. of mine at a time would be added with the greatest nicety, and its effect on the temperature in coming through at the bottom watched for with the greatest attention before any further charge was hazarded. But with hot-blast, the heat of the furnace in every part is so far above the *bare necessary*, that the working is quite removed from any danger from small accidental variations. I have seen hundred weights after hundred weights added to the charge of a hot blast-furnace, as caprice or wantonness might dictate, regardless of its effects beneath, and yet without fatal consequences, when 1-20th part the mischief would have set *fast* a cold blast-furnace from top to bottom. In brief, I cannot better oppose this error into which Mr. Mitchell has been led than with the following quaint depreciatory remark of an old cold-blast keeper on the new process:—"Hot air, indeed! why it is as easy to make iron with it as to make bricks." The need for his skill had vanished. As a consequence of this constancy of temperature, the yield of a hot blast-furnace is *less* instead of *more* variable, as Mr. Mitchell states. Variations of heat being less important, results with the same materials are more uniform. There is a variableness in the qualities of hot-blast iron from different localities, more marked than with cold-blast; but this is a different point, and not what Mr. Mitchell means. Whatever is the *characteristic* of a district, it is *heightened* by hot-blast. If the minerals yield cold-short iron, hot air will make it more so, or the reverse; so also the peculiarities of Scotch iron are increased by the process, which, doubtless, arises from a greater portion of the qualifying alloys being added at the higher temperature. Where lime—the property of which is to impart strength—is the only mineral contained in the ore, it is, compared with the usual compound of silex and alumina, scarcely fusible; but when overcome by hot-blast, the result is amazing strength with great uniformity. I do not exactly know what signification is to be attached to the term *pure mine*, used here and elsewhere; but as far as it means a more careful selection of materials for forge than grey iron, the reverse is the practice; neither is it necessary to make any alteration in the blast. One other point is erroneous in the impression it leaves, as to the constructing a blast-furnace. The *material* of the boshes is not of moment, because there is no part of the furnace less subjected to destructive agencies—their inclination being parallel with the current of the blast. In themselves, the boshes never wear. If a furnace be constructed very contrary to the principles laid down by Mr. Gibbons, the great wear on the sides of the hearth will cut away the lower part of the bosh, which is the top of the hearth wall; but so far from this deduction being a disadvantage, it is absolutely required to correct the form before the furnace can do good work. The more the bosh is destroyed here the better. Elsewhere it is immoveable before any agency that reaches it. There is one difference in the wear of hot and cold blast-furnaces—viz.: in the former, the upper part of the cone, about 8 or 10 feet from the top, is far more rapidly destroyed. What part of this destruction is from greater heat, or what part from a difference in the gases evolved, is unknown—in fact, there are such a multitude of details that require analytical examination, that a staff of 20 practical chemists, under an able commander, would not in 20 years' hard work put us in possession of all we ought to know. David Mushet.

Nov. 19.

IRON AND CARBON.

Sir,—Though I cannot subscribe to the whole of Mr. Leighton's cinder theory, I do not consider it by any means invalidated by the attempted *reductio ad absurdum* of Mr. D. Mushet. At page 30, of Mushet *On Iron and Steel*, we find that puddled bar-iron, fused with about 2 per cent. of charcoal, affords a button, surrounded by a rim, more or less strong, of *glass of iron—i. e., cinder*. Charcoal iron, on the other hand, was found (*vide* page 29) without any trace of earthy or vitreous matter adhering. Then, again, working bars of puddled iron under a vertical blow, or rather repeated blows, *does actually*, at a common red heat, convert these bars into something closely resembling wire beesoms. Whence comes this glass of iron; and why does British bar-iron beat up into wire beesoms at a low heat, whilst good charcoal iron shows neither of these peculiar phenomena?—Wootz: *Nov.* 11

ROTARY ENGINES.

Sir,—Am I to understand by Mr. Curr's expression, that "he has no knowledge of the annihilation of power at ending and re-commencing a reciprocating stroke," that he has not investigated, or that he does not recognise, its existence? It is usual for working engineers to make a deduction of 8 lbs. per inch for the item of *friction*, which, including the friction of the air-pump, will come to much the same as Mr. Curr's estimate. The object of my inquiry was to ascertain, as an essential part of calculating the merits of any rotary application of steam, how much of this general term *friction* really belonged to it, and how much was estimated as due to the loss by reciprocation. The elements of this loss are two, merging into each other. First, that which arises from bringing the whole mass of the moving parts of the engine at the velocity of, say, 3 feet per second, suddenly to rest; and, secondly, the power expending in overcoming the inertia against motion in the opposite direction. When the moving power is withdrawn, the tendency of the load is to stop the engine gradually; but as no time can be allowed for this natural expenditure of the momentum at ending the stroke, neither for gradually imparting it at the beginning of the return, the loss of power is in proportion to this gain of time. Hence arises a very large share of the advantage from using steam expansively, the power gradually weakening before it is stopped, and again exerting its full energy at the point of difficulty. Mere friction, as such, may approximately be ascertained by testing the weight required to sink a packed piston in the steam cylinder (the bottom, of course, open to avoid resistance from compressed air), the bucket in the air-pump, the bucket in the pump (if a pumping-engine), and the force necessary to move the beam detached from its appendages.

It is difficult to carry this out with correctness; but, making every allowance, the sum of these forces, which represents the real friction, will be found even in small engines, where the proportion of friction is greatest (excepting the last item), to be much less than the large amount of 1152 pounds per square foot, which would be required if the allowance of 8 lbs. per inch were for friction *merely*. The object I have in view is best exemplified by adverting to a large pumping-engine with its heavy appendages. These can only be moved with convenience at about 1 ft. per second, often less, as the wear and loss would be suicidal of bringing to rest and moving again such enormous masses at a maximum speed. Now, the larger the engine, the *less* is the *proportion* of loss due to friction. In a steam-cylinder of 1 ft., the friction line on the circumference is, in round numbers, 8; in a cylinder of 4 ft., 12, or four times the friction of the smaller cylinder. But the working capacity of their areas is as 1 to 16; the friction of the large engine is, therefore, in proportion, four times less; and if the usual allowance of 8 lbs. for friction were supposed to be distributed in the smaller engine, at 4 lbs. for annihilated power, and 4 lbs. for real friction, we should have, in the large engine, the proportion of friction reduced to 1 lb. per inch; and where there was a large weight of pumps, and the necessary balances to be moved and stopped, the power absorbed in those acts would increase so enormously, even at the smallest speed which can be given to a prime mover, that we see presented in a very strong light the absolute necessity which has introduced the expansive principle in large pumping-engines. The locomotive engine stands at the opposite extreme in the scale of proportion. Here friction may be considered as *all*, because the uniform motion of the weight renders the loss by reciprocation comparatively *nil*. This is rather at length on what I am aware is merely elementary; but I wish, if possible, to explain my object.

Many of your correspondents being interested in rotary engines, I thought it possible they might have carried out into detail calculations on these proportionate losses, which, in a great degree, involve the question of success in the rotary application of steam, and the communication of such calculations would be interesting. I am not certain whether Mr. Curr, in his latter sentence, intends any comparison between the *amounts* of steam required by a reciprocating engine, *with* or *without* a fly-wheel. If he alludes merely to the *distribution* of the quantity *needed* where there is a fly-wheel,

it is a correct designation of the purpose for which a fly-wheel is applied. —In my letter on Patent Reform, I beg to correct the following misprint, which much alters the sense:—"*Two more divisions*" should read "*two main divisions*."—DAVID MUSHET: *Nov.* 18.

ROTARY ENGINES.

SIR,—In answer to Mr. D. Mushet's *query*, I may say that I am not aware that the "advocates of the rotary application of steam," except some few, calculate on any other gain from direct in lieu of ultimate rotary motion, than that of avoiding the machinery and friction connected with the latter. The friction of the piston of a direct rotary engine, however, will, I doubt not, always be greater than that of a cylinder engine, but it can most assuredly be reduced to much less than *one-third of the power of the steam*; and if your correspondent is desirous of adopting a rotary engine, he is at liberty, if he chooses, free of license dues, to have one constructed on my principle, the merits of which I should feel pleasure in discussing against any other rotary engine which has yet, or may hereafter, appear before the public.—JOHN WESTON: *Nov.* 19.

THORNEYCROFT'S ANTILAMINATING RAILS.

SIR,—I beg to inform the railway companies, that in the prices quoted for the antilaminating rails—the particulars of which appeared in another column—no charge is made for the patent improvement, but simply the price of the iron, as it would be in bars of the same quality, except for fitting rails, and the small additional cost of making the antilaminating part of the iron, which is all made by hammering, no rolls being used in the process until rolling it into the rail. These I have determined to be the prices until the rails are in general use, and their superior quality well known, and properly appreciated, when I hope no objection will be made to a small per centage being added to the price, as a reasonable reward for the invention. It has been said—How comes it to pass that your rails are so much higher in price than the ordinary make of rails? I answer, because the ordinary rails are not made of best No. 3 iron. If any ironmaster, or company of ironmasters, undertakes a contract for rails, to be made of best No. 3 iron, at the same price, or little more than the price of common bars, he must either lose the difference in price of 20s. to 30s. per ton out of his own pocket, or save himself by giving an inferior quality to what he has contracted to sell. I leave it to the railway public if the latter is not likely to be the case in a majority of instances; yea, I know this is the case to some extent, and I defy successful contradiction to these facts. This subject was clearly and truly explained in a letter, published in your Journal of July 28, signed "A Staffordshire Ironmaster," and I think you would do well to re-publish that letter for the information of the railway companies.* I am the person referred to in it, but not the author of it. G. B. THORNEYCROFT.

Shrubbery Iron-Works, Wolverhampton, Nov. 21.

* The letter referred to by our correspondent shall appear in next week's Journal.

THE DIAMOND.

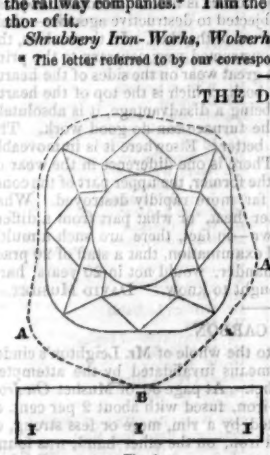

Fig. 1.

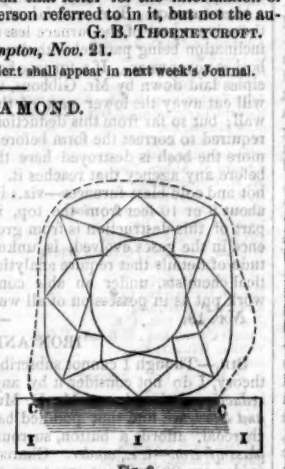

Fig. 2.

SIR,—There is but one method known to man whereby that hardest of all natural substances, the diamond, can be made to assume a regular form and polish. The process is entirely mechanical, and being, perhaps, the very slowest of all manual operations, it is necessarily attended with considerable expense. Two stones are cemented into the ends of properly constructed handles, and then rubbed together under powerful pressure. To give an idea of the tedium of this process, it is sufficient to state that the cutting of a diamond weighing from 24 to 30 carats, requires the constant labour and attrition of seven or eight months. The cutting of the Regent, or Pitt diamond, which is among the Crown jewels of France, and weighs 136¾ carats, was only executed at a cost of 5000*l.*; and the enormous egg-shaped diamond, which has been in the possession of Portugal for the last 40 years, and the value of which (according to Dr. John Murray) is estimated by the Brazilian lapidaries at 300,000,000*l.* sterling,* remains to this moment uncut, in consequence, it is said, of the great expense which would attend the operation.

It has occurred to me, and I now submit the idea to the consideration of your readers, that a definite form may easily be given to the diamond by the operation of chemical agency, and this too in a very sure and rapid manner. We all understand the true chemical character of this beautiful gem; we know it is nothing more than pure carbon in a crystalline form, and, therefore, subject to all the affinities of this element—for instance, it may be readily burnt in oxygen, and the resulting product is carbonic acid gas. The simple fact of its burning was first shown by the Florentine academicians, who, in 1694, caused a fragment of this stone to enter into combustion by placing it in the focus of a powerful burning-glass. The experiment has since been frequently repeated, and with invariable success. Sir Humphrey Davy, when at Florence, more than a century after the above date, closely investigated the fact, and its attendant phenomena, and in doing so he used the very burning-glass with which the discovery was originally made. He states (*Phil. Trans.*, 1814) that a diamond, when strongly ignited by the lens, in a thin perforated capsule of platina, continues to burn in oxygen after being withdrawn from the focus. The light it affords is steady, and of so brilliant a red as to be visible in the brightest sunshine. It also gives off intense heat in burning—so great that, on one occasion, during the combustion of three fragments of diamond, which did not altogether weigh two grains, a fine wire of *platinum* used for attaching them to the tray was fused, and that some time after the diamonds were removed out of the focus. In another experiment, the same philosopher informs us that the diamonds employed *burnt with great* brilliancy. It is quite clear, from these experiments, and from many others which might be adduced, that the surface of this hard stone can be readily burnt away to any required extent by ignition in an atmosphere of oxygen; nor is the temperature required for this purpose so great as is commonly supposed—a good red-heat is amply sufficient.

Messrs. Allen and Pepys placed within a platina tube 3·95 grains of the clearest and most transparent Brazil diamonds. The platina tube was *heated red-hot*, and kept so *for ten minutes*, while oxygen was repeatedly passed over the ignited stones. 2·49 grains were consumed. In a second experiment, diamonds, weighing 4·01 grains, were *heated red-hot* in the tube *for a quarter of an hour*. Oxygen gas was passed and repassed over them, as in the former instance. All the diamonds were consumed, and not a vestige was left (*Phil. Trans.*, 1807). But though these facts prove, beyond a doubt, that the substance of this otherwise intractible gem may be readily disposed of by chemical affinity, yet the particular method of proceeding recorded in these experiments is scarcely fitted to the requirements of the lapidary. It would be difficult, I conceive, even by the adoption of judicious contrivances, to limit the action of the oxygen to any particular locality of the stone, and the effect produced would be at the best but proximate, and not precise. The difficulty thus resulting from a diffused action might possibly be lessened, but it would not be entirely removed, were we to subject the stone to the nascent oxygen disengaged from red-hot nitre, peroxide of manganese, or any other superoxygenated body, which is capable of yielding this element under the required circumstances. There is another point also which requires consideration. It was shown by the experiments of Davy, and by those of Allen and Pepys, that all diamonds which have been partially burnt become opaque, and assume the appearance of white enamelled porcelain, or of glass which has been acted upon by hydrofluoric acid. Now, though it is most probable that this opacity is entirely superficial, and may, therefore, be removed by polishing, yet the fact requires to be proved before the process can be regarded as practically available.

There is an instance of chemical affinity, however, existing between the diamond and another elementary body, so curiously simple, and so easy in its apparent application, that it seems to be disencumbered of all difficulty whatever; and it is to this that I wish to direct attention. In 1799, Guyton de Morveau, the well-known and indefatigable French chemist, placed a diamond, weighing 13 grains, within a small crucible of soft iron, and carefully secured it from the action of the external atmosphere by means of a close iron stopper. After subjecting it for about an hour to a bright red-heat, the crucible was withdrawn from the fire, and the cover removed, when it was found that the diamond had entirely disappeared, and that the inside of the *soft iron crucible* was converted into *steel*—an effect clearly identical with the ordinary process of cementation, where iron is converted into steel by being placed in close troughs, or crucibles, with *charcoal* powder, and exposed to the action of a long and intense heat. Morveau's discovery will be found fully detailed in the 31st volume of the *Annales de Chimie*, p. 328; and its truth and correctness were afterwards corroborated by the unanimous testimony of a special Committee of Investigation appointed by the French Academy of Sciences.

The experiment excited very general interest in the scientific world, and it was repeated shortly afterwards by Sir George Mackenzie, who published a report upon the subject, and who fully succeeded in converting iron into steel by means of the diamond. The fact of this conversion is now, I believe, very generally admitted, and it is certainly consistent with chemical analogy and rational anticipation; for if diamond be in reality carbon, which no one in these days will attempt to dispute, then it should certainly follow the habitudes of that element through the range of its various affinities, and not behave as if it were a distinct substance.

I will, therefore, regard the chemical change which is here recorded in the light of an ascertained truth, and will merely stop for a moment to consider *what is the particular physical condition of the carbonaceous* particles at the instant of chemical combination. First, is the diamond *volatalized* before it unites with the iron? I think we can scarcely entertain such an anomalous supposition, for it would be easy to quote a host of authorities against it. Smithson Tennant states, in his paper "On the Nature of the Diamond" (*Phil. Trans.*, 1797), that "*the diamond is capable of resisting the effects of a violent heat when the air is carefully excluded.*" Dr. Muspratt, in his translation of Plattner's renowned work on the blow-pipe, tells us the diamond is *remarkably indestructible, and may be heated to whiteness in a covered crucible, without injury* (page 257). These observations are in direct keeping with the results of general experience. We have been always taught to regard elementary carbon as a fixed substance when subjected to ordinary heats, however high these may be; and it is only in the extreme calorific intensity of the voltaic arc that any appearances to the contrary are observable. Sir Humphrey Davy, in his experiments with the great battery of 2000 pairs of plates, belonging to the Royal Institution, subjected a great number of refractory substances to the action of this powerful flame, and he informs us that "fragments of diamond, and points of charcoal and plumbago quickly disappeared, *and seemed converted into vapour.*" (*Elements of Chemical Philosophy*, page 152).

This is the only known instance of the vaporization of diamond, for the problematical feat performed with a galvanic battery, by Dr. Hare, of Philadelphia, and reported in *Silliman's Journal*, was an operation the very reverse of this. *Diamonds* were not *vaporized*, but the ignited carbonaceous vapour transferred from one pole to the other, was *condensed into diamonds* at the point of the negative electrode.

It must be tolerably clear, then, from what has been here stated, that in Morveau's experiment the diamond is not volatilized previous to its combination with the iron; neither does it appear possible that it can enter into a state of fluidity, for though pure carbon, both amorphous and crystalline, has been repeatedly subjected to the most intense heats which modern science is capable of producing, yet there is not a single known instance in which it has liquified *per se*. We are, therefore, led to the irresistible conclusion, that the diamond retains its natural condition of solidity during the whole period of action; and as chemical union can only occur between dissimilar particles, seperated by insensible distances, so those parts of the stone which are in actual contact with the iron, are the only ones which suffer reduction. In further proof of the correctness of this position, I quote the following passages from Mr. David Mushet's important and voluminous *Papers on Iron and Steel*:—"It was discovered, in the course of these experiments" (on the manufacture of cast-steel) "*that the charcoal entered largely into combination with the pieces of iron immediately in contact with it*, constituting, in the first instance, a species of white cast-iron, unfit in that state for any useful steely purpose; but which, acting as a flux to the more remote masses, brought the whole, by a continuation of the heat and a perfect fusion, into one uniform state of cast-steel." The author then proceeds to say, that in the communication of carbon to bar-iron, in the process of cementation for the production of blistered steel, "the process is clearly one proceeding from the surface of the bar surrounded by charcoal to the interior of the same, which could only become steelified by a transmission of the carbon through the solid pores of the iron."—Chap. II., *On the Principles of Iron and Steel*, note F.

The application of these experimental facts, which I have thus endeavoured to establish, will now be easily understood by a reference to the annexed diagram, where the process is shown, as applied to a natural stone. *Fig.* 1 represents the Regent, or Pitt, diamond, already referred to; the dotted line, A, A, exhibiting the actual form of the original crystal. The stone rests at the point B, upon a soft iron slab, marked I, I, and in this position it is subjected to a good red heat. In accordance with the principles already enunciated, chemical action will commence at the point of contact, B; and if the stone be previously attached to a suitable and well-constructed guide, it will slowly begin to descend in a vertical direction, and continue to do so as its substance is progressively absorbed by the soft iron. A repetition of this process, with several consecutive pieces of pure soft iron, will ultimately reduce that side of the stone to the degree required, as represented in *fig.* 2, where it is seen resting upon the plane, C, C. From what has been already stated, it will be obvious that the carbonization of the metal is necessarily local, and occurs merely at that part of the slab which, in the diagram, is shaded. Should it be found, upon removing the arrangement from the fire, that the crystal is obstinately adhering to the metallic plate upon which it rests, a severance of the two elements may be easily effected by immersion in dilute sulphuric acid. It is a direct consequence of this mode of reducing a diamond, that if either a high polish, or an artistical configuration be given to the finishing plate of iron, the polish, or the design, will be accurately transferred to the stone, for the two surfaces are in ultimate contact at all points, and the one is, therefore, a perfect impression of the other. In Mr. Perkins's very ingenious process for the multiplication of steel plates, it is found that the carbonization of the engraved surface is effected without even a microscopic alteration occurring in the character of the original lines.

It is only right to observe, before I terminate this letter, that a certain faint degree of doubt has been cast upon the evidence by which the celebrated diamond experiment of the French chemists is established, and this by an authority whose opinion is certainly entitled to considerable respect. Mr. Mushet, however, disowns all fastidious scepticism as to the carbonaceous matter of the diamond; and so far from attempting to deny the absolute reality of the declared fact, he expressly says, in a note to the third chapter of *Experimental Papers*—"In respect to the experiment of my countryman, Sir George Mackenzie, it is but justice to state, that it furnished more direct evidence of steel being formed by means of the diamond than that performed in the Polytechnic School of France." The question is, certainly, fraught with great interest, and it is possible one of the Messrs. Mushet may be inclined to verify the experiment with one of the three diamonds which were presented to their father some years ago, for a similar purpose, by a late distinguished lady.—ISHAM BAGGS: *Nov.* 21

* See an interesting *Memoir on the Diamond*, by Dr. John Murray. Longman and Co. According to the ordinary mode of computing the value of these stones, the Portuguese diamond, in its present rough state, is worth but 8,644,300*l.*; but such a method of calculation is inapplicable to the valuation of this ponderous crystal, the weight of which is upwards of 12 ounces. The Koh-i-noor, or Mountain of Light, which has recently passed from the hands of the Sikhs into the possession of England, is stated in the *Delhi Gazette* to be the largest and most precious in the world—a statement which is contradicted by the author just quoted, who gives its weight as only equal to about 139 carats.

MOTIVE POWER.

SIR,—A correspondent, in last week's Journal, signing himself "An Old Subscriber," desires to know whether, on the 9th Feb., 1842, I did not take out a patent for improvements in obtaining motive power, by means of carbonic acid; as if so, he says he can draw my attention to a subject which is calculated to effect great economy in the invention. I now beg to answer this question in the affirmative, and to assure your correspondent that I shall have great pleasure in receiving his promised communication through the medium of your columns.—ISHAM BAGGS: *Nov.* 22.

PATENT LAW REFORM.

SIR,—I am much gratified to find that Mr. Mushet coincides with my views as regards the reform of the Patent Laws; for, in fact, the exceptions which he has taken to certain points in my former communication are really groundless, as a full exposition of my views and sentiments will testify. I do not, as he supposes, undervalue the reduction of patent fees proposed by the commission, but it is at present *only recommended*, and I doubt very much whether it will ever be carried out. If this plan should be adopted, together with my amendment, I should consider that a decided step towards reform had been made; but my experience leads me to prefer my preliminary protection plan to that of the commissioners, if unsupported by it; for it is not, as Mr. Mushet supposes, so much easier to get parties to invest 100*l.* than to get them to invest 300*l.*; in fact, I consider it quite as difficult for patent purposes to get a captalist to anvance the one sum as the other; because it is not, generally speaking, small capitalists who will touch these matters at all, and the large capitalist would make the difference of cost a very inferior consideration. He would ilook at the return to be expected from the speculation, and according to ts prospects in this respect, so would he decide; but should the reduction of patent fees induce small capitalists to come forward, then would much mischief result to the community at large, for it is well known that attempts to bring out a patented invention without full capital usually results in miserable failures.

With regard to the French system, I will own that the objections of Mr. Mushet are most weighty; but I do not propose that the system shall be carried out intact. I would give the option of paying the tax in advance for the whole or remaining period of the patent; and, moreover, I would give the Revenue Commissioners discretionary power in regard to the allowance of post payment of the tax within six months after the proper time, upon payment of a penalty. After that period, in order to prevent any inconvenience to the public, by want of knowledge of the utility of the patent, notice should be sent by the commissioners to the Inrolment Office, and entered on the record.

Mr. Mushet misunderstands the French system, when he deprecates being "looked up" by an *employé*; for it is not the practice to send the tax-gatherer round for the patent dues. It is left for the patentee to make the payments to secure his own property, which it is his interest to do, just as a lessee will take care to fulfil those covenants, upon non-fulfilment of which he might be ousted; if he does not do so, the Government take no notice of the matter, but he looses his rights.

I am afraid Mr. Mushet expects too much from me, when he says he shall look with interest for what Mr. Campin promises on the subject of preserving the legal rights of patentees, after they have obtained their patents. On this part of the subject I feel great diffidence, because I am sure that in the main principles the Patent Law, leaving out of the question the practice with regard to obtaining letters patent, is now placed on a pretty sure basis; and I am afraid that the application of "legislative dexterity" might complicate and confuse, rather than amend. With regard to the cost of patent cases, I think much of the expense would be removed, by doing away with the "scientific evidence" usually required, merely referring the common evidence and facts of the case to the scientific official referees, whose report should guide the court on the points of novelty and utility (practicability) of the invention. But the extravagance of patent suits will not be fully curtailed, until the general revision of legal practice—a consummation most devoutly to be wished. This part of the subject requires the attentive consideration of the Legislature, as it is beset with difficulties and dangers.—F. W. CAMPIN: *Nov.* 22.

THE GLOW-WORM.

SIR,—Among your "Notices to Correspondents," some time ago, I remember that the light of the glow-worm was referred to. This has been with me the subject of numerous observations and multiplied experiments —a few of these experiments I venture to refer to, as well as some of the conclusions I have drawn from them, as recorded in my *Researches in Natural History*, second edition, 1830, pp. 140, *et sequent.* The luminous matter introduced into various gaseous media did not shine with diminished light in non-supporting atmospheres; nor was there any perceptible increase when introduced into oxygene, nitrous oxide, &c. In a temperature of 99°, the luminous matter emitted a greater brilliancy than in any other. In higher temperatures the light became proportionally feeble and more evanescent. The light was not disturbed by immersion in acids, &c., or in saline solutions, provided no chemical action was superinduced. "When from extreme cold it had ceased to be luminous in the dark, I held it, when immersed in olive oil, in a thin glass capsule in the hollow of my warm hand, it then emitted a faint nebulous light." In fact, by alternations of heat or cold, I could revive or extinguish the luminous evolution at pleasure—suffice it to say, that my experiments considerably exceeded a *hundred* in number. I have now simply to quote the first of my several deductions, inferential from these experiments:—"Light, as connected with the glow-worm, is a subtile evanescent material principle, perhaps connected with a peculiar organised structure, circumfused round the vitellulus of the ovum, or integrating with it, unsupported by any chemical action, and confinable by the transparent film, or capsule, which imprisons it."—J. MURRAY: *Portland-place, Hull, Nov.* 20.

THE RED ANT PLAGUE IN LONDON.

SIR,—The invasion of the "Great Metropolis" by the red ants is a very serious evil. Individually, they are "a feeble folk," but, when the assemblage is composed of myriads, they form a "great congregation," and their havoc is incredible, apart from their intolerable annoyance. Among the agencies destructive to insect life, are turpentine and ammonia. Cajeput oil and jalap are said to be fatal to them; but the *expense*, irrespective of other considerations, render these inutile and inapplicable. The plan I would venture to propose is a very simple one, and I believe it would prove entirely efficacious. Dust the floors and shelves with pounded quicklime; and if that should not completely succeed, "water" the floors with the ammoniacal liquor of gas-works, when the ammonia would be instantly disengaged by the quicklime. J. MURRAY.

Portland-place, Hull, Nov. 20.

WHEATEN BREAD.

SIR,—It is very probable that Mr. Smith is right in his assertion, that neither chalk nor gypsum are ordinarily used by the London bakers; and he has a right to be believed, because he seems to speak advisedly, and as one well acquainted with the facts of the case. In the *leavening* of bread, the adulteration with either of these could easily be detected; but in biscuits, and other kinds of unleavened bread, the detection would not be so facile. Perhaps the assumption of these, as well as bone-dust, considered as entering into the adulterations of flour and bread, is based on insufficient data. Phosphate of lime, however, would rather *add* to the value of the nutritious principles of wheaten flour than diminish its excellence, as phosphate of lime is found in milk, and forms the solid material of bone. It is one characteristic of the oat in reference to its ratio.

It has been said that 3 tons of *alum*, and 300 tons of potatoes, are the weekly average disposed of to the London bakers. Such has been asserted, and these, I fancy, may be considered the chief adulterating materials, though potatoes, *if sound*, can scarcely be considered an item in the category of adulterations. *Alum*, however, if introduced, is a very serious evil, and this I have too frequently detected, and often in abundant quantity. During the year 1816, so fatal to the disorganisation of the gluten, arising from the sprouting of the grain, in consequence of the wet autumn, *Cornish clay* was mixed with wheaten flour to a fearful extent; and it will not be forgotten that a considerable part of an entire cargo was seized in the Thames, and when the sacks of "flour," so called, were examined, the greater proportion was discovered to be "Cornish clay." And I remember to have once seen in a gentleman's museum, on the Tamar, a wedge of Cornish clay, with this inscription—"Called flour in 1816."

Portland-place, Hull, Nov. 19. J. MURRAY.

THE BALLOON PROPOSED AS AN AGENT OF DISCOVERY.

SIR,—I must freely confess I like the idea very much, as lately suggested, of employing a *balloon* in the Arctic regions, to aid in the discovery of Sir John Franklin and his associates; and I cannot abandon all hope that they may be yet alive. Cordage of sufficient length and strength might be employed to attach them to *terra firma*, as it might not be prudent, under such circumstances, to abandon the balloon to its *proprio motu!* The adequate quantity of iron turnings and sulphuric acid required to give it sufficient buoyancy, would be comparatively inconsiderable. From the elevation that might thus be attained, a more extensive range of vision would, in these regions, be obtained by the aid of the telescope, and form a panorama of intense and unique interest. I do not anticipate any such

accident to the valve as occurred in a recent case. Such an occurrence might be easily provided for by a provision of sulphuric acid and water, or ice, which might be, by means of a cord over a pulley, brought into contact, and sufficient heat generated to thaw the valve, and confine its action to the requisite spot. I confess I have often thought sulphuric acid might be not unfrequently employed by Arctic navigators as a valuable auxiliary in perilous circumstances; the heat produced by mixing sulphuric acid and water together, being equivalent to that of the ebullition of the latter. In my work on Switzerland, I had referred to what might have been achieved by it in relation to the catastrophe of the *Vallée des Bagnes*.—J. MURRAY: *Portland-place, Hull, Nov.* 20.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY 40

BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

TRETHEVY COPPER MINE.—This MINE is situate in the parish of ST. CLEER, near LISKEARD, adjoining and parallel to the SOUTH CARADON MINES, whose riches are almost unequalled, and the vast profits realised by the fortunate adventurers are too well known to need comment: £5 per share was only expended, when they came to enormous riches. West Caradon, too, in the same neighbourhood, has turned out exceedingly rich. It is believed a similar fortune exists in TRETHEVY COPPER MINE; and when we view the trifling risk per share which is required to carry on the adventure, compared to the almost certain prospects of success, no one can object to the insignificance of the sum required. The mine is in a most beautiful valley at the foot of the Granite Hill of Caradon, a situation well known to miners to be productive. Cross-courses intersect the lodes at all points, being indicative of great mineral deposits. The east and west lodes are eight in number, large and well defined, with the two great South Caradon cross-courses running through the sett, as well as the West Caradon, and other large cross-courses. The gossan, peach, prian, and black and yellow copper ore, is of a rich description. 41

A shaft has been sunk to the 33 fathom level under the adit—the adit being 5 fathoms deep; but, owing to the scarcity of surface water in summer, the work could not be further prosecuted. Sufficient was seen of the lodes to evidence within 10 or 15 fathoms deeper the riches exist; carrying, as it does, at that level, rich black and yellow copper ore, with all the characteristics of South Caradon. The work done will belong to the adventurers, subject only to a small payment for the water-wheel and pump-work now on the sett, which will hereafter be paid by the shareholders, when arranged, as also about £130 preliminary expenses.

It is now, therefore, only necessary to erect a 10-in. cylinder steam-engine, with pumps, &c., and sink the shaft 15 fathoms deeper, the estimated cost of which is £1500; when this is accomplished, there can be very little doubt but that the shareholders will congratulate themselves on the stability and profitable nature of their adventure. The engine can be assisted by the water-wheel eight months in the year, so that the working expenses of the engine will be comparatively small, and every economy will be used in the works.

In order to carry out this undertaking in a *bond fide* and equitable manner, it is proposed, and agreed to by all parties concerned, that £1500 shall be banked, being obvious that the importance and flattering prospects of the mine fully justifies such determination, so as legitimately to proceed with the works, for the purpose of developing the riches, which all competent judges, who have seen it, unhesitatingly declare exist in the Trethevy Copper Mine. It will be here seen that the mine is not brought forward as a mine of a speculative character, but with the sole view of bringing a valuable property into commercial and profitable investment.—Sixty shares are reserved to the owners of the mine.

The dues to the Lord is one-fifteenth.

Purser—Mr. PETER ROSKELLY, Liskeard; Mr. JAMES TIMEWELL *(pro tem.)*, Exeter.
Bankers—Devon and Cornwall Bank, Liskeard and Exeter; Messrs. Sanders, Exeter.
Solicitor—H. W. HOOPER, Esq, Exeter.

The Mine is divided into five hundred and twelve shares; to be paid at various periods hereafter fixed, if required—First deposit, £1; second deposit, £1; third deposit, £2; and fourth deposit, £1 10s.

It is believed that very little more than £1500 will be required before the mine is in profitable work. The greatest portion of the shares are already taken up by highly-respectable shareholders.

Mr. Henry Vatcher, Exeter; Mr. Thos. Sanford, Exeter; Mr. Tricketts, Plymouth; and James Lane, Esq., 80, Old Broad-street, London, will receive applications for the few remaining shares, of whom all further information can be obtained.

WARRANTED SAFETY FUSE.—W. BRUNTON & CO. beg to inform Mine Agents, Contractors, and Merchants, that having completed their Machinery for the MANUFACTURE of the ABOVE ARTICLE, they are enabled to offer FUSE of a very superior quality, and at considerably reduced prices.

W. B. & Co. can SUPPLY FUSE in ANY LENGTHS that may be required.
Penhellick Fuse Factory, Pool, Truro, Cornwall. 42

TESTIMONIALS.

We, the undersigned, hereby bear our testimony to the excellence of the Safety Fuse, manufactured by Messrs. Brunton and Co. We have had it in use in our mines; and, after sufficient trial, find it to be fully equal to any Fuse we have ever used:—

Carn Brea Mine.
R. H. Pike, Purser.
John Leuten, James Miners, John Vivian, John James, } Agents.

North Pool Agents.
James Evans.
John Nancarrow.
Frederic Evans.

South Roskear Agents.
John Dunkin.
William Thomas.

Cook's Kitchen Agents.
Joseph Vivian.
Richard Bennetts.

Cook's Kitchen Agents.
John Ivey.
William Hitchens.

North Roskear Agents.
Joseph Vivian.
William Michell.
William Thomas.

Tincroft Agents.
Peter Floyd.
Thomas Stainsby.
Thomas Lean.
Henry Hocken.
Richard Martin.

William Nancarrow.
Alex. Eudey, Joseph Eudey, } *Wheal Agar Agents.*

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES AND CLOCKS.

E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area), Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.

DENT'S PATENT DIPLIEDOSCOPE, 43

or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 14 3—Carr's Hartley 14 6—Chester Main 14 9—Davison's West Hartley 14 9—East Adair's Main 14 3—East Wylam 14—Hastings Hartley 14 6—Hedley's Hartley 12 6—Holywell 15 3—North Percy Hartley 14 3—Newcastle Hartley 12 6—New Tanfield 14 3—Old Tanfield 13 6—Ravensworth West Hartley 14 6—South Pearth 14—Tanfield Moor 14 6—Tanfield Moor Bute's 14—Westerton Hartley 12 6—Wylam 16—Wall's-End Brown's 14 6—Elm Park 15 3—Gosforth 15 9—Hedley 15 6—Heaton 15 6—Northumberland 15—Pearth 14—Wharncliffe 16—Washington 15—Eden Main 16 6—Lambton Primrose 16 9—Bell 16 6—Belmont 19 9—Braddyll 17—Hetton 17 6—Haswell 17 9—Hutton 15 6—Jonassohn's 14 3—Lambton 17 3—Lumley 16 3—Old Ducks 17—Russell's Hetton 17 3, 17 6—Stewart's 17 6—Whitwell 16 3—Hough Hall 16—Hartlepool 17 6—South Hartlepool 16 6—West Hetton 16—Whitworth 14—Cowndon Tees 15 9—Maclean's Tees 15 6—Seymour Tees 16—South Durham 15 6—St. Helen's Tees 15 3—Tees 17 6—Cowpen Hartley 14 6—Derwentwater Hartley 14 6—Howard's West Hartley Netherton 14 9—Nixon's Merthyr and Cardiff 21—Sidney's Hartley 14 9—Snapethorpe 15.—Ships at market, 406; sold, 164.

WEDNESDAY.—Buddle's West Hartley 14 3—Carr's Hartley 14 3—Davison's West Hartley 14 6—East Adair's Main 13 9—East Wylam 14—Hastings Hartley 14 3—Holywell 15 9—Ord's 14 6—Ravensworth West Hartley 14 3—Tanfield Moor Bute's 14—Walker Primrose 13 9—West Hartley 14 6—Wylam 15 6—Wall's End Acorn Close 15 6—Brown's 14 6—Benshaw 14 9—Bewicke and Co. 15 9—Bell and Brown 15 9—Gibson 14 6—Harton 15 6—Hotspur 15—Heaton 15 6—Killingworth 15 6—Morrison 15 3—Northumberland 15—Original Gibson 15 9—Eden Main 16, 16 3—Lambton Primrose 16 3—Bell 16 3—Belmont 16 9—Braddyll 17—Hetton 17 6—Haswell 17 9—Hutton 15 6—Jonassohn's 15 3—Lambton 17—Lumley 16 3—Russel's Hetton 17—Stewart's 17 3—South Hartlepool 16 3—West Hetton 15 9—Whitworth 14—Adelaide Tees 16 9—Cowndon Tees 15 9—Maclean's Tees 15 6—St. Helen's Tees 15 3—Tees 17 6—West Cornforth 15 6—Blayne Stone 21—Cowpen Hartley 14 6—Derwentwater Hartley 14 3—Howard's West Hartley Netherton 14 6—Nixon's Merthyr and Cardiff 21—Ships at market, 255; sold, 127.

FRIDAY.—Buddle's West Hartley 14 3—Carr's Hartley 14 6—Davison's West Hartley 14 6—Adair's Main 13 6—Hasting's Hartley 14 6—Hedley's Hartley 12 6—Holywell 16—N. P. Hartley 14—New Tanfield 14 3—Ord's Redheugh 14 6—Tanfield Moor Bute's 14—Walker's Primrose 13 6—West Hartley 14 6—Westerton Hartley 12 6—Wylam 15 3—Wall's-End Bewicke and Co. 16—Burraton Killingworth 15 6—Gosforth 15 9—Harton 15 9—Morrison 15 6—Northumberland 15—Percy 15 3—Wharncliffe 16—Walker 15 6—Eden Main 16 6—Bell 16 6—Belmont 17—Hetton 17 9—Haswell 17 9—Heselden 15 6—Jonassohns 15 3—Lambton 17 3—Lumley 16 3—Russell's Hetton 17 3—Stewart's 17 6—Whitwell 15 2—Caradoc 16 3—Denison 15 6—Heugh Hall 16—South Kelloe 16—South Hartlepool 15 6—West Hetton 16—Whitworth 14—Adelaide Tees 17—Seymour Tees 16—South Durham 16 6—Tees 17 6—Cowpen Hartley 14 6—Nixon's Merthyr and Cardiff 21.—Ships at market, 146; sold, 74.

ANOTHER MIRACULOUS CURE OF A LIVER AND STOMACH COMPLAINT BY HOLLOWAY'S PILLS.—Extract of a letter from Mr. Harvey, of Chapel Hall, Airdrie, dated June 15th, 1849.—"To Professor Holloway.—Sir,—Your valuable pills have been the means, under God's blessing, of restoring me to perfect health. I had suffered for two years with a severe liver and stomach complaint, and was given up as incurable by several eminent doctors, my case appearing so hopeless that my death was daily expected. In that state I commenced taking your pills, which I continued for a few weeks, and they have so effectually cured me that I now enjoy the best of health."—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London. 44

BRITISH MINING INTERESTS.

TESTIMONIAL TO MR. J. B. SHARP, OF LONDON.

Some Gentlemen, who are fully aware of the heavy losses sustained, and the expenses incurred by Mr. Sharp, in his opposition to the "COPPER AND LEAD DUTIES' BILL," for the removal of the protecting Duties upon those Metals and their Ores, during the entire Session of 1848, have resolved on making this APPEAL to all classes interested in those questions, to mark their sense of Mr. Sharp's able, assiduous, and persevering efforts for the protection of British Mining Industry.

From the 18th February, when Lord John Russell first announced the intention of Government to remove that protection from our mineral products, down to the 5th September, the very last day of the Session—when the Royal Assent was given to the Bill by the Queen in person—it is within the knowledge of the parties making this statement, that Mr. Sharp laboured without cessation; for the first two months of that period, in preparing information and papers for Members; and documentary evidence to be brought before the Select Committee determined to be asked for; and, upon the refusal of Ministers, on the 17th of April, to grant a Committee of Inquiry, then, in organising the most strenuous opposition, in both Houses of Parliament, to the progress of the Bill in every stage.

It is, also, within their knowledge, that the documents and information which Mr. Sharp drew up, collected at home and abroad, and combined for those various purposes, are so voluminous, as almost to suggest the belief, that it was beyond the power of any single individual to accomplish so heavy a task; and which, they are persuaded, could only have been accomplished by the most unremitting attention.

Without—as the Gentlemen making this statement quite understand and believe—without the slightest personal or pecuniary interest in any mine or mining property in existence, but on public grounds alone, did Mr. Sharp devote all his time and his energies, in the indefatigable manner which they have described, to serve the interest of the British Miner; sacrificing every other object to that cause. The consequence was, as they are also perfectly convinced, that, between the losses which he sustained, and the expenses which he incurred, in carrying on his measures during a period of nearly seven months—every shilling of which expenses (in London) was defrayed from his own funds—he was a *direct loser* to the full extent of *one thousand pounds*, and collaterally and prospectively of much larger amounts.

Mr. Sharp's assent to this Appeal being publicly announced, has been, with difficulty, obtained by the Gentlemen who have thus interested themselves in the matter. They do not feel themselves of sufficient importance, in the scale of society, to put their names prominently forward; but they consider facts of much more importance than names; and they are quite impressed with the belief, that very few in the Mining Districts, or otherwise interested in the subject, have been at all aware, even of the name of the party who thus laboured so long and so earnestly for their protection. Those exertions, however, all the County and Borough Members of the Western Counties, besides numerous others, Peers and Members, who supported the cause in both Houses of Parliament, they are satisfied will, if referred to, most readily and distinctly admit.

They cannot doubt, therefore, that when the extraordinary and unflinching efforts which Mr. Sharp made, for so long a period, the large losses which he sustained in consequence, and the heavy expenses that he incurred, are known to the several classes connected with the mineral properties of the country, this, their plain and unpretending appeal, will be promptly responded to, by those interested coming forward to confer upon him such a Testimonial, as shall, upon the simplest principles of justice, remunerate him, at the least, for the direct sacrifices which he thus made on their behalf. And they can only attribute to the want of a more extensive knowledge of those exertions, and of the party who made them, the fact that, within the fourteen months which have elapsed since the close of his labours in Parliament, he has not received, altogether, an amount equal to the sums which he actually disbursed, nearly a year and a half ago, in the prosecution of those labours.

Amounts already subscribed in Cornwall.

	£		
The Right Honourable the Earl of Falmouth	25	0	0
The Right Honourable Lady Basset	10	0	0
Sir Charles Lemon, Bart., M.P.	10	0	0
E. W. W. Pendarves, Esq., M.P.	10	0	0
W. H. Pole Carew, Esq., M.P.	10	0	0
T. J. A. Robartes, Esq., M.P.	10	0	0
Joseph Thomas Treffry, Esq.	100	0	0
The Reverend Canon Rogers	10	0	0
John Hearle Tremayne, Esq.	5	0	0

45

Contributions may be made at the undermentioned Bankers, who have kindly consented to receive the same—namely:

In London	Messrs. Barclay, Bevan, and Co., Lombard-street. Messrs. Williams, Deacon, and Co., Birchin-lane. Messrs. Praeds, Fane, and Co., Fleet-street. Messrs. Ransom and Co., Pall Mall East.
Liskeard, *Launceston*, *Bodmin*, *St. Austell*	Messrs. Robins, Foster, and Co. The Devon and Cornwall Banking Company.
Redruth	Messrs. Tweedy, Williams, and Co.
Camborne	Messrs. Willyams and Hodge.
Helston	
St. Columb	
Truro	Messrs. Tweedy, Williams, and Co. Messrs. Willyams and Co.
Falmouth	Messrs. Tweedy, Williams, and Co.
Penzance	Messrs. Bolithos, Sons, and Co.
St. Ives	Messrs. Bolithos, Sons, and Co.
Plymouth, *Devonport*, *Exeter*, *Tavistock*, *Callumpton*, *Kingsbridge*, *Newton Abbot*, *Totnes*	The Devon and Cornwall Banking Company.

Communications may be addressed to the *Honorary Secretary*, Mr. ROBERT NEALE, 4, Red Lion-square, Holborn, London.

SEA, FIRE, LIFE ASSURANCE OFFICE,
CONNECTING THE MINING INTERESTS OF ENGLAND AND WALES.
(ESTABLISHED BY ACT OF PARLIAMENT.)
31, *CORNHILL, LONDON.*

Capital £100,000, in shares of 20s. each, to be paid in full on allotment, bearing a guaranteed interest of 5 per cent. in perpetuity (irrespective of further dividends) upon the paid-up capital. 46

Application for shares to be addressed to the Directors, at the offices of the Society.

Marine, fire, and life assurances granted on the most liberal terms.

Immediate and deferred annuities granted on terms especially advantageous for investment of capital. By order, AUG. COLLINGRIDGE, Managing Director.

SPECIMENS OF THE RATES OF PREMIUM FOR ASSURANCE OF £100.

Age.	*With Profits.*	*Age.*	*Without Profits.*
20	£1 19 3	20	£1 14 6
30	2 11 3	30	2 5 1
40	3 8 3	40	3 0 2

The whole of the Profits from the Life Department divided amongst the Policy holders. All Life Policies indisputable.—All Life Policies free of stamp duty.

ALFRED BURT, Actuary.

*** WANTED, AGENTS and MEDICAL REFEREES for the PRINCIPAL TOWNS in the KINGDOM.
COUNTY SURVEYORS ALSO REQUIRED.

AGENTS WANTED IN DEVON, CORNWALL, AND NORTH AND SOUTH WALES.

SCOTTISH AMICABLE MUTUAL LIFE ASSURANCE SOCIETY.—ESTABLISHED 1826.
LONDON OFFICES—No. 43, LOMBARD-STREET.
PRESIDENT.
THE MOST NOBLE THE MARQUIS OF DALHOUSIE. 47
VICE-PRESIDENTS.
HIS GRACE THE DUKE OF BUCCLEUCH.
JOHN CAMPBELL COLQUHOUN, Esq., OF KILLERMONT.

A Policy of £1000, opened with this Society in 1846, was, in 1846, by the addition of £2 per annum on every £100, increased to £1120. And, by the above principle of this Society, an addition of 2 per cent. per annum, upon the above accumulated sum of £1120, gives, as the value of the original policy of £1000,

In 1849, if it then becomes a claim	£1187	4	0
1850 " "	1209	12	0
1851 " "	1233	0	0
1852 " "	1254	8	0

TABLE—*Illustrating Accumulation of Additions on £1000 Policy on Society's Plan:*—

Amount with Additions. At end of Years.	At 2 per cent. per ann.	Sum of Premiums paid according to Ages at entry. 20.	27.	34.	41.
6	£1120 0 0	£145 5 0	£167 8 4	£196 5 10	£235 19 2
13	1276 16 0	290 10 0	334 16 8	392 11 8	471 18 4
27	1659 6 7	581 0 0	669 13 4	785 3 4	943 16 8
55	2802 10 10	1162 0 0	—	—	—

New entrants admitted to every advantage.
Immediate, deferred, and survivorship annuities granted.
Every facility afforded to assurers.

THE WHOLE PROFITS DIVIDED AMONG THE ASSURED.
Manager—WILLIAM SPENS.
Resident Secretary in London—J. E. C. KOCH.

Under the PATRONAGE OF ROYALTY, and the AUTHORITY of the FACULTY.

KEATING'S COUGH LOZENGES.—Upwards of 40 years' experience has fully confirmed the superior reputation of these LOZENGES, in the cure of Asthma, Winter Cough, Hoarseness, Shortness of Breath, and other pulmonary maladies. They have deservedly obtained the high patronage of their Majesties the King of Prussia, and the King of Hanover; very many also of the Nobility and Clergy, and of the Public generally, use them, under the recommendation of some of the most eminent of the Faculty. They have immediate influence over the following cases:—Asthmatic and Consumptive Complaints, Coughs, Shortness of Breath, Hoarseness, &c.

Prepared and sold in boxes, 1s. 1½d., and tins, 2s. 9d., 4s. 6d., and 10s. 6d. each, by Thomas Keating, chemist, &c., No. 79, St. Paul's Churchyard, London, and retail by all druggists and patent medicine venders in the kingdom. 48

IMPORTANT TESTIMONIAL.

Copy of a Letter from Colonel Hawker (the well known Author on "Guns and Shooting.")
Longparish House, near Whitchurch, Hants, October 21, 1846.

SIR,—I cannot resist informing you of the extraordinary effect that I have experienced by taking only a few of your lozenges. I had a cough for several weeks, that defied all that had been prescribed for me, and yet I got completely rid of it by taking about half a small box of your lozenges, which I find are the only ones that relieve the cough without deranging the stomach or digestive organs.

I am, Sir, your humble servant, P. HAWKER.
To Mr. Keating, 79, St. Paul's Churchyard.

PATRONIZED BY HIS ROYAL HIGHNESS PRINCE ALBERT,
Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.

Shortly will be published, in Lithograph,

A SYNOPSIS OF THE CORNWALL TICKETINGS
FOR COPPER ORES, from 1800 to the present time; together with
A SYNOPSIS OF THE SWANSEA TICKETINGS,

From 1815 to the same period; which contains the following information—viz.: the Standard, Produce, Price, Quantity of Copper Ores Sold, Amount of Money realised, and the Quantity of Fine Copper produced; with respective fluctuations for each year, as well as for every six years; exhibiting also the totals and averages for the whole period collectively.

The above information will be contained on a large sheet of drawing paper, on which the Standard in each year will be delineated by horizontal lines of various colours, pointing to the particulars thereof; the said lines having a scale affixed to them, for the purpose of showing the continued RISE and FALL annually of the STANDARD.

These SYNOPSES—as is the case with the original—will be "Inscribed, by permission, to JOSEPH THOMAS TREFFRY, Esq., of Place, Fowey, the greatest employer of miners and other labourers in the West of England."

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SEWERAGE OF LONDON.—The ATTENTION of the COMMISSIONERS appointed to determine upon the MOST EFFICIENT MATERIAL for the CONSTRUCTION of the SEWERS OF LONDON, is particularly directed to the ASPHALTE OF SEYSSEL, which more than any other material is applicable to the CONSTRUCTING and INTERNAL COATING of BRICK CULVERTS and OTHER CHANNELS for DRAINAGE.

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